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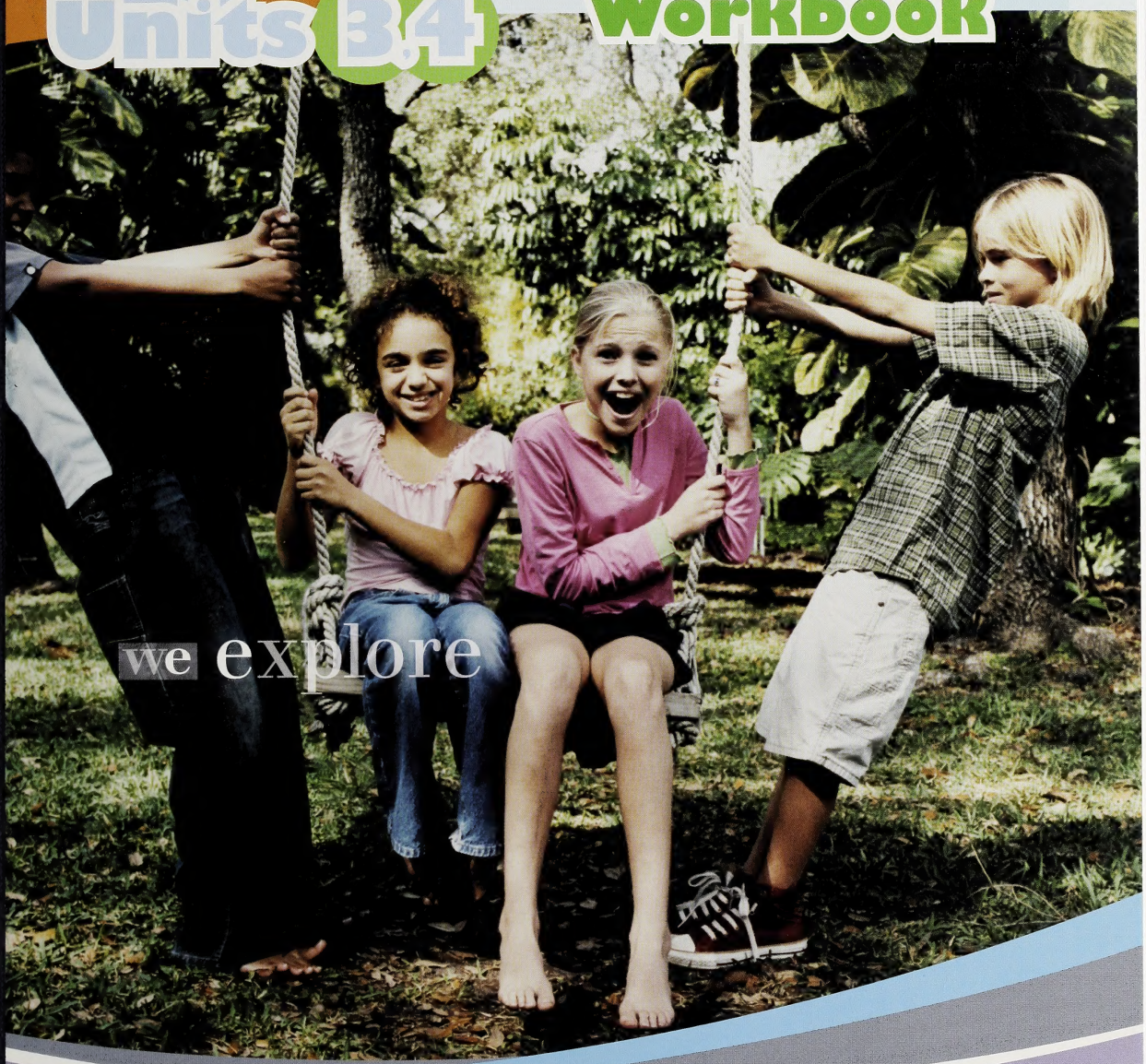
LearnEveryWare

Math 5

Units 3 & 4

Workbook



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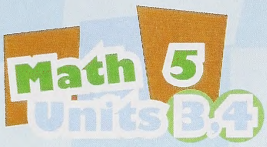

Math 5 Learn EveryWare – Units 3 and 4 Workbook
ISBN: 978-0-7741-3069-1

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Etraffic Press® would like to acknowledge the production and project teams of Etraffic Solutions™ Inc. and The Distributed Learning Resources Branch for their contributions to the project management, design, editing and development of this publication.

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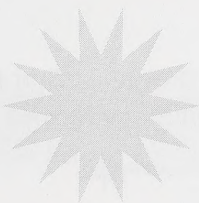
Lesson 1

Right Angles

For 1 – 9: Circle the pictures with 90° angles.

1. 

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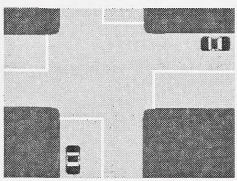
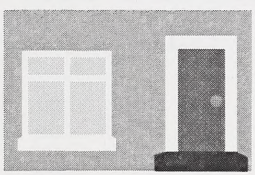
3. 

4. 

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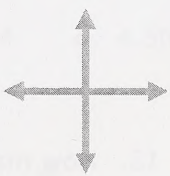
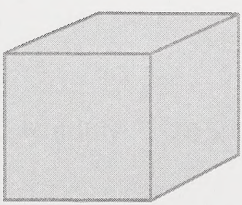
6. 

7. 

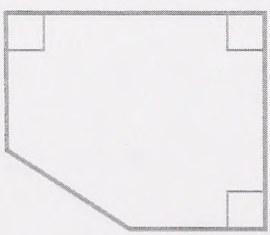
8.

9.

10. Sketch a 90° angle and label it with the right angle symbol.

11. Look around the room that you are in. Sketch at least 5 objects or items that have a 90° angle. Label the angle in your picture.

12. How many 90° angles are in this figure?



13. Reflect: Lian needs to make a right angle on her paper. She has 3 objects: a paper clip, a key, and a recipe card. Which would she choose to help her sketch a right angle and why?

Mixed Review

1. Daksha has $1.25. He needs $4.50 to see a movie. Which of the following number sentences let you find the amount Daksha needs for the movie?

   a. 4.50 + 1.25 b. 1.25 – 4.50 c. 1.25 x 4 d. 4.50 – 1.25

2. Multiply 12 x 5

3. Multiply 20 x 7

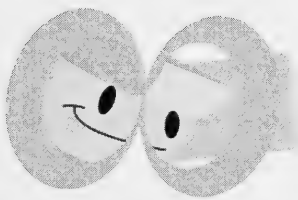
4. Divide 80 ÷ 5

5. Divide. Write the answer and the remainder.

$3\overline{)274}$

Lesson 2

Measuring Length



Let's Explore

Exploration 1: Measuring Small Objects

Materials: Metric ruler, Five assorted small objects, Pencil, Paper

1. Use your ruler to measure your hand like this:

2. Record the measure in millimetres and in centimetres in the table provided at the end of this Exploration.

3. Use your ruler to measure your hand like this:

4. Record the measure in millimetres and in centimetres in the table provided.

5. Measure your finger like this:

6. Record the measure in millimetres and in centimetres in the table provided.

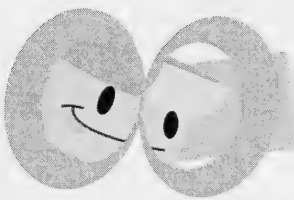
7. Measure each of your five assorted small objects in both millimetres and in centimetres. Record each measure in the table provided.

8. Compare your measures to those of a friend. Are the measures the same for your hands?

9. Are the measures the same for your objects?

10. Compare the millimetre measure to the centimetre measure. How are they the same? How are they different?

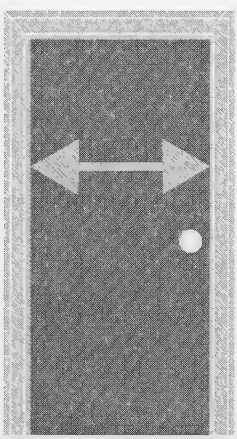
Object	Millimetres	Centimetres
Hand width		
Hand length		
Finger unit		



Let's Explore

Exploration 2: Measuring Large Objects

Materials: Metre stick, Pencil, Paper



For 1 – 2: Measure the width of the door in the room you are in. That means this way:

1. How many centimetres wide is the door?

2. How many millimetres wide is the door?

For 3 – 4: Measure the window in the room. Record how tall it is.

3. How many centimetres tall is the window?

4. How many millimetres tall is the window?

For 5 – 10: Find two objects in the room you are in that are about 1 metre or less. Use the metre stick to measure the object and find the exact measurement.

5. How many centimetres is the first object?

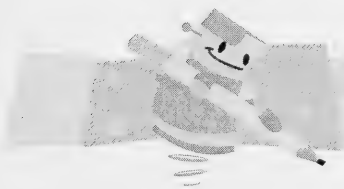
6. How many millimetres is the first object?

7. How many centimetres is the second object?

8. How many millimetres is the second object?

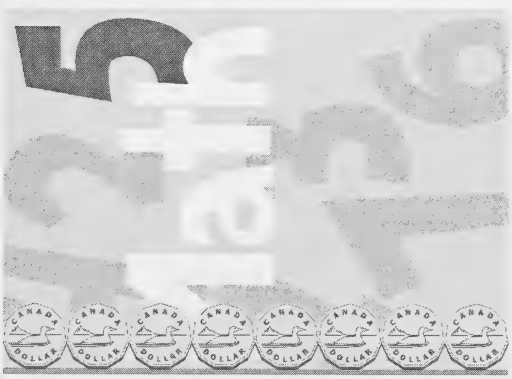
9. How do your measurements compare to those of a friend?

10. How do your millimetre measurements compare to your centimetre measurements?



Let's Practice

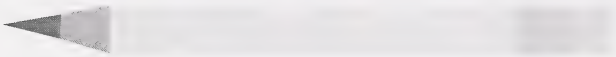
1. Zach measured the length of his math book with Loonies. How many Loonies wide is his book?



For 2 – 5: Measure the following objects in mm.

2. How long is the pencil?

_____ mm



3. How tall is the leaf?

_____ mm

4. How long is the toy car?

_____ mm

5. Complete the following chart showing the relationship between mm and cm. Remember that 10 mm = 1 cm.

mm	cm
10	
50	
	10
200	
	8
	35

For 6 – 9: Draw a line that is:

6. 6 mm

7. 6 cm

8. 15 mm

9. 5 cm

For 10 – 16: Which unit would you use to measure the following objects: centimetres or millimetres?

10. a grain of rice

11. width of a two dollar coin

12. length of a pencil

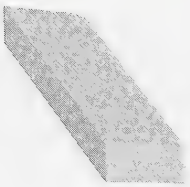
13. length of a grape

14. a marble

15. length of a banana

16. length of your foot

17. Measure the following three items.



_____ _____ _____

18. Put the three objects from number 17 in order from smallest to largest:

_____, _____, _____.

19. Reflect: Describe how you can find the measure of the line segment below if you don't have another ruler.

Mixed Review

For 1 - 5: Practice your multiplication facts.

1. 3 x 5

2. 4 x 8

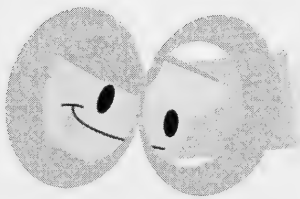
3. 2 x 9

4. 6 x 8

5. 7 x 4

Lesson 3

Measuring Volume



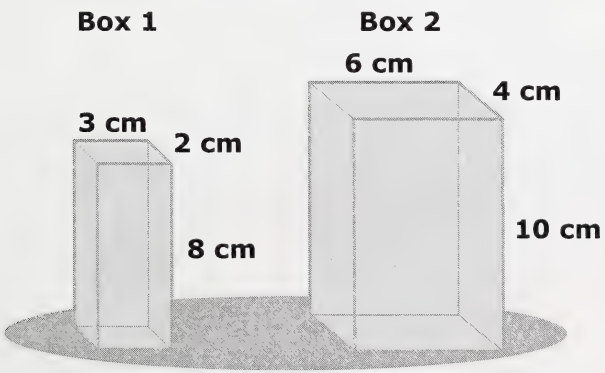
Let's Explore

Exploration 1: Packaging the Gift

Materials: 5 sheets of centimetre grid paper, Paper, Tape, Scissors, Pencil

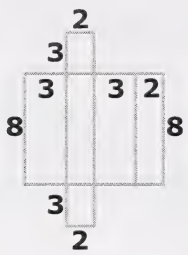
Daksha made a sculpture in art class for his mother. He wants to wrap it and give it to her for her birthday. The sculpture is 9 cm tall, 4 cm long and 3 cm wide. He is trying to decide which box to use to put the sculpture in. He will need extra room to add packing materials to protect the sculpture. Here are his box options:

Which box should he use?



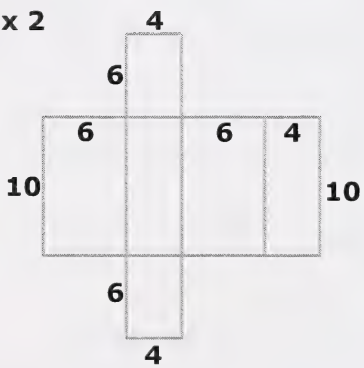
1. Draw the first box by drawing Net A on your centimetre grid paper. Remember, each square on the paper represents a square centimetre.

   Net A: **Box 1**



2. Draw the net of the second box on grid paper using Net B. You will need to tape sheets of grid paper together to make it large enough for this figure.

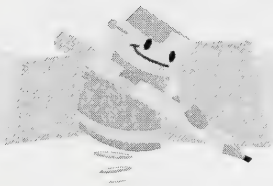
   Net B: **Box 2**



3. Cut out each net and fold to form the box. Use tape to hold it together.

4. Decide which box would hold a sculpture by finding the volume of the sculpture and also of both boxes.

5. Describe the method you used to determine which box will hold the sculpture.



Let's Practice

For 1 – 5: Circle the best unit to measure the item given.

1. volume of a shoe box

   cm^3 m^3

2. volume of a garbage dumpster

   cm^3 m^3

3. volume of a suitcase

   cm^3 m^3

4. volume of a container holding 20 computers

   cm^3 m^3

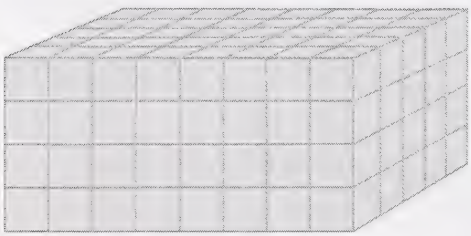
5. volume of a refrigerator

   cm^3 m^3

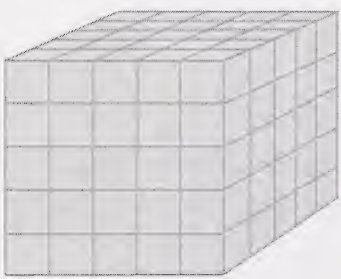
For 6 – 10: What is the volume of the figures shown?

6. _____

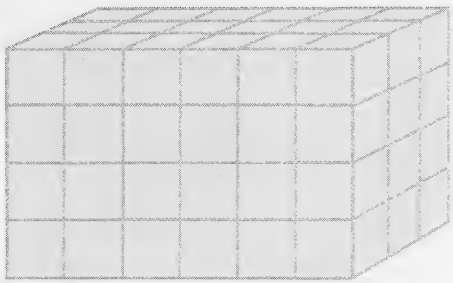
7. _____



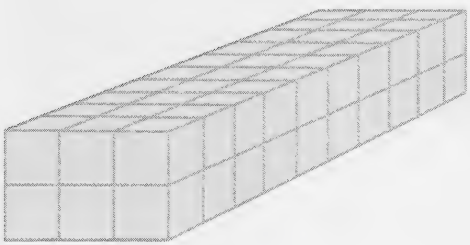
8. _____



9. _____

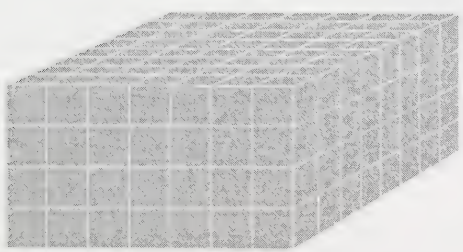


10. _____



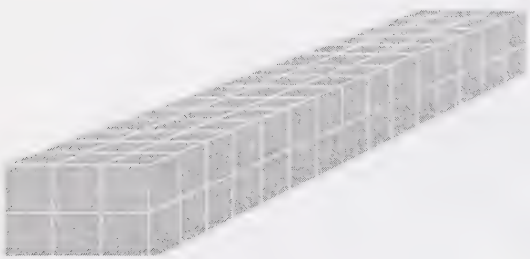
For 11 – 16: Find the volume of the containers with the following dimensions:

11. 8 m x 7 m x 4 m=_____

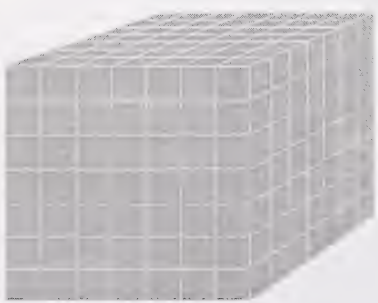


12. 2 cm x 2 cm x 2 cm =_____

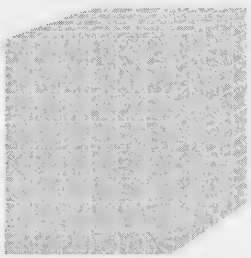
13. 15 m x 3 m x 2 m =_____



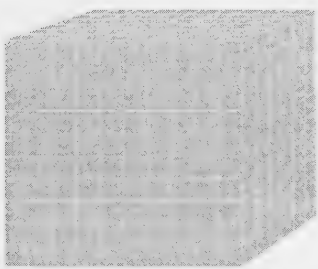
14. 7 cm x 7 cm x 7 cm = _____



15. 5 m x 6 m x 8 m =_____



16. 10 m x 10 m x 6 m = _____



For 17 – 19: Estimate the volume of each object. Write the letter of the best estimate.

17. A lunch box
    A. 100 cm^3 B. 1 m^3

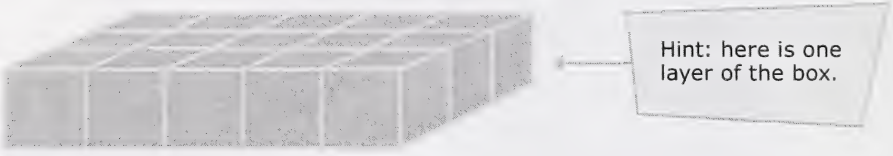
18. A crayon box
    A. 500 cm^3 B. 500 m^3

19. A large packing box
    A. 10 000 cm^3 B. 1 m^3

20. Reflect: How many centimetre cubes (1 cm^3) would you need to fill up a metre cube (1 m^3)?

For 21 – 23: Solve the following problems.

21. Alyssa received a gift box that has a volume of 90 cm^3. The box is 5 cm long and 3 cm wide. How tall is the box?



22. A rectangular container has a volume of 24 m^3. What could its height, length, and width be?

23. A flower pot is 50 cm long, 20 cm wide and 20 cm tall. Will 25 000 cm^3 of soil be enough to fill it?

24. Reflect: Explain how to find the volume of an object or container through an example.

Mixed Review

For 1 -5: Find the sum.

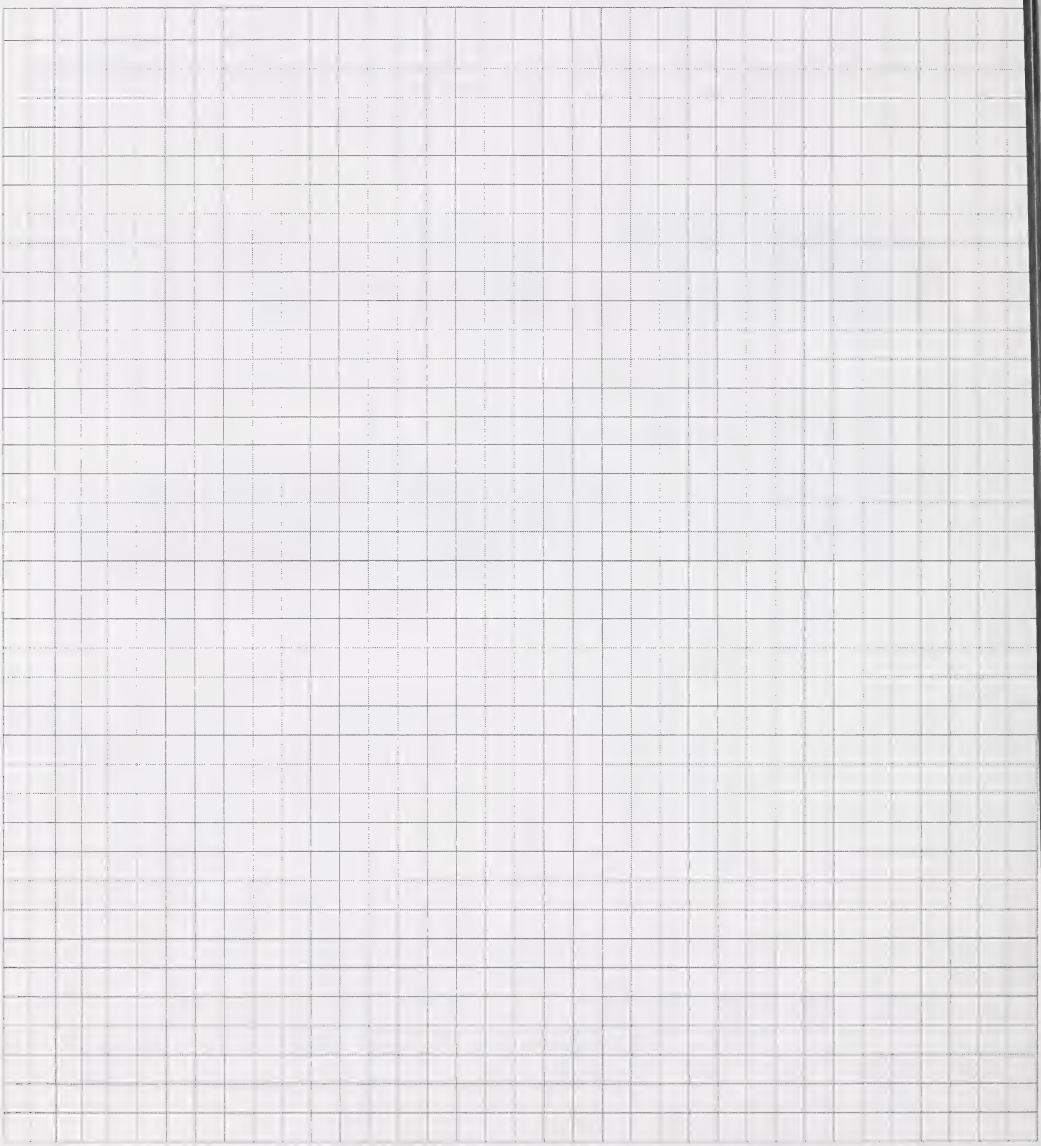
1. 56
   40
   +20

2. 300
   200
   +100

3. 124 + 14 + 30

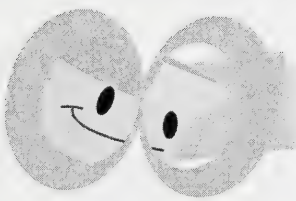
4. 35 + 15 + 65

5. 110 + 20 + 50



Lesson 4

Capacity



Let's Explore

Exploration 1: Measuring Capacity

Materials: Set of graduated cylinders (10 mL to 1 000 mL), A pitcher of water, Pencil

1. Use the 10 mL graduated cylinder. Fill the cylinder to the 10 mL mark.

   This may take some practice. Pour the water back into the pitcher and try it two or three times until you get it exactly right a few times in a row.

2. Pour 10 mL into the 50 mL cylinder. Repeat until it is full.

3. How many 10 mL cylinders did it take to fill up the 50 mL cylinder?

4. How many 50 mL cylinders do you predict it will take to fill up the 500 mL cylinder?

5. Pour 50 mL into the 500 mL cylinder. Repeat until it is full to test your prediction.

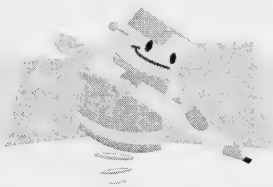
6. If you were wrong in your prediction, describe the difference.

7. How many 500 mL do you predict it will take to fill up the 1 000 mL cylinder?

8. Pour 500 mL into the 1 000 mL cylinder. Repeat until it is full to test your prediction.

9. If you were wrong in your prediction, describe the difference.

10. Describe the relationship between the graduated cylinders.



Let's Practice

1. What is capacity?

2. What two units are most commonly used to measure capacity?

Which unit would be the best to measure the following items? Write mL or L.

3. a child's dose of medicine _____

4. water in a bathtub _____

5. soda bottle _____

6. water in a fish tank _____

7. thermos _____

8. ice tray _____

9. washing machine _____

10. water in a vase _____

For 11 - 14: Estimate for the following questions.

11. About how many millilitres are in a cup of coffee?

12. About how many mL of milk are in a bowl of cereal?

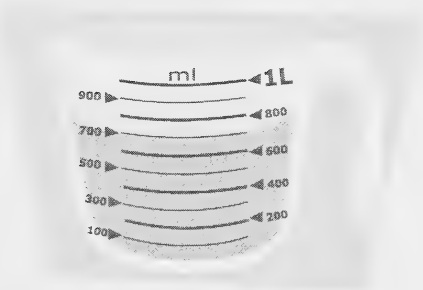
13. About how many litres are in a standard aquarium?

14. About how many litres of water are in a bathtub?

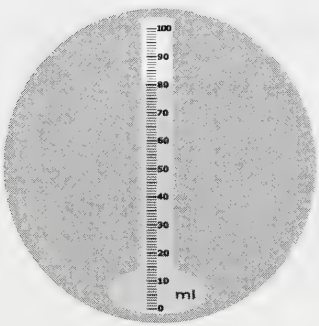
For 15 - 24: Record the measure of liquid in the containers shown.

15. _____

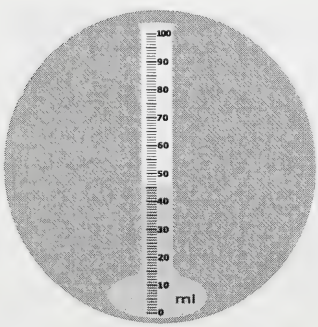
16. _____


ml
1L
900
800
700
600
500
400
300
200
100

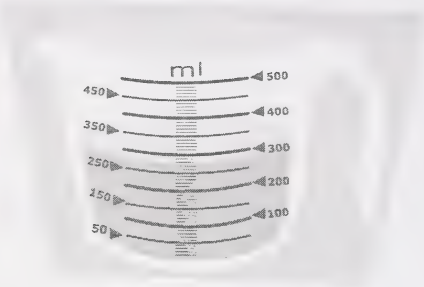
17. _____


100
90
80
70
60
50
40
30
20
10
0
ml

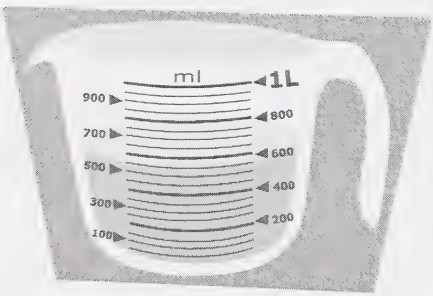
18. _____


100
90
80
70
60
50
40
30
20
10
0
ml

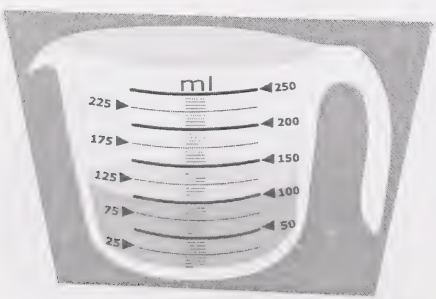
19. _____


ml
450
350
250
150
50
500
400
300
200
100

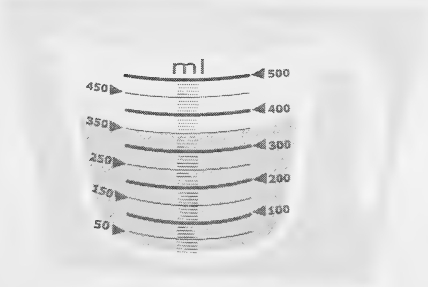
20. _____


ml
900
700
500
300
100
1L
800
600
400
200

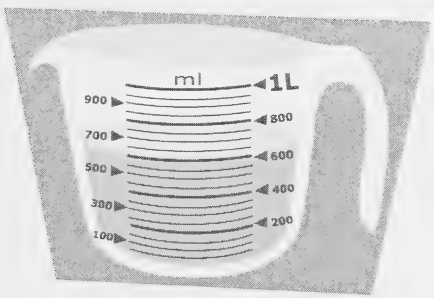
21. _____


ml
225
175
125
75
25
250
200
150
100
50

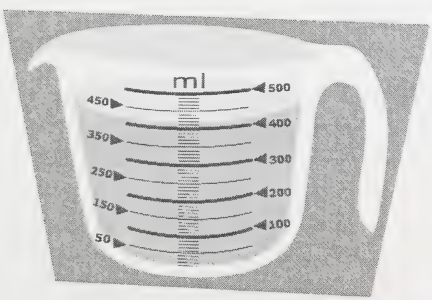
22. _____


ml
500
450
400
350
300
250
200
150
100
50

23. _____


ml
1L
900
800
700
600
500
400
300
200
100

24. _____


ml
500
450
400
350
300
250
200
150
100
50

25. Reflect: What are some examples of things measured in litres and millilitres that can help you estimate capacity?

Mixed Review

Compare using <, >, or =.

1. 2 300 _____ 3 200

2. 145 _____ 135

3. 1.05 _____ 1.050

4. 2.3 _____ 2.45

5. 0.25 _____ 0.02

Lesson 5

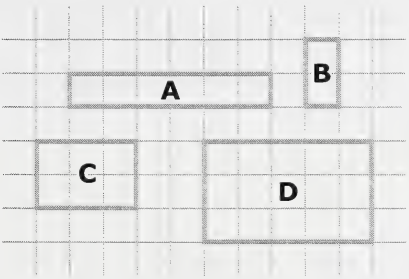
Rectangles and Perimeter

Let's Explore

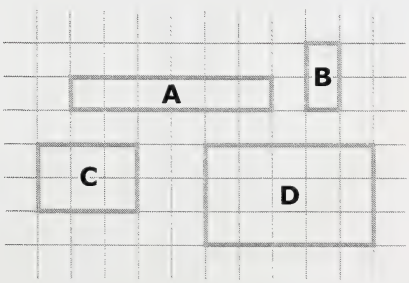
Exploration 1: Rectangles of a Given Perimeter

Materials: One piece of centimetre grid paper, Pencil, Pencil crayons or crayons

On your grid paper draw the following with your pencil:



Now, use a colour to outline two sides that have different measures:



Now look at the sum of the two sides you coloured and the sum of the other two sides:

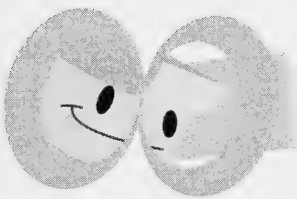
Rectangle	Sum of Coloured Sides	Sum of Other Two Sides	Perimeter
A	7	7	14
B	3	3	6
C	5	5	10
D	8	8	16

1. On your grid paper, create three more rectangles where the sum of the two sides equal 4, 6, and 9.

2. What do you notice about the sum of the two different sides and the sum of the other sides?

3. How does the perimeter relate to the sum of the two different sides?

4. Reflect: How can you use this information to help you draw rectangles for a given perimeter?



Let's Explore

Exploration 2: How Many Drawings?

Materials: Pencil, Pencil crayons or crayons, Grid paper

1. Nina and her grandfather bought 20 metres of wood to fence a section of her yard for her dog. How many different rectangular enclosures can they make with the materials?

2. Use the grid paper to draw all possible enclosures for the fence. Record the side lengths in the table.

Figure Number	Length of Side 1	Length of Side 2	Length of Side 3	Length of Side 4

Let's Practice

1. What is a rectangle?

2. What is perimeter?

For 3 - 7: Draw at least 4 rectangles with the given perimeters.

3. 56 cm

4. 32 mm

5. 18 cm

6. 24 cm

7. 44 m

8. A garden has a perimeter of 46 m. Draw a rectangle with this perimeter.

9. A new store is being built and it is going to have outside walls with lengths of 15 m and 30 m. What is its perimeter?

10. You have 28 m of garden fencing. Draw four different rectangles that can be enclosed by the fencing. Label the sides with the dimensions.

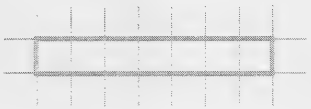
11. Use the perimeter formula to show two examples of rectangles with the same perimeter.

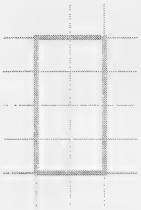
12. The length of one side of a rectangle is 30 cm. The perimeter of the rectangle is 100 cm. What is the length of the other side of the rectangle? Hint: Think about what 1/2 of the perimeter will be.

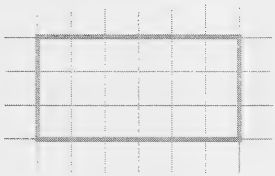
13. Reflect: Summarize what you learned in this lesson.

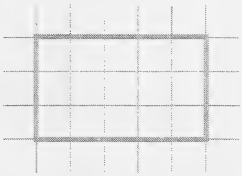
Mixed Review

For 1 – 4: What is the area of each rectangle in square centimetres?

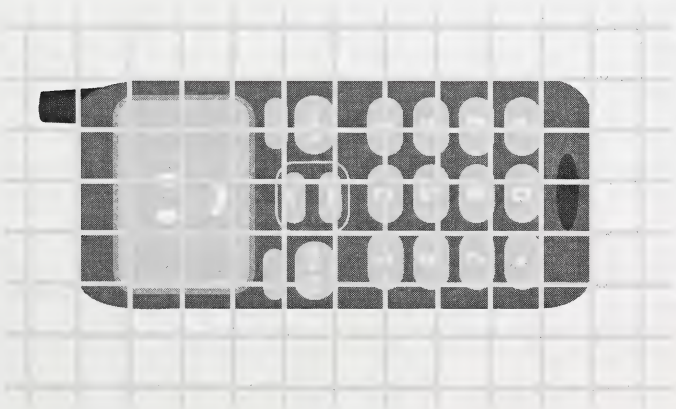
1. 

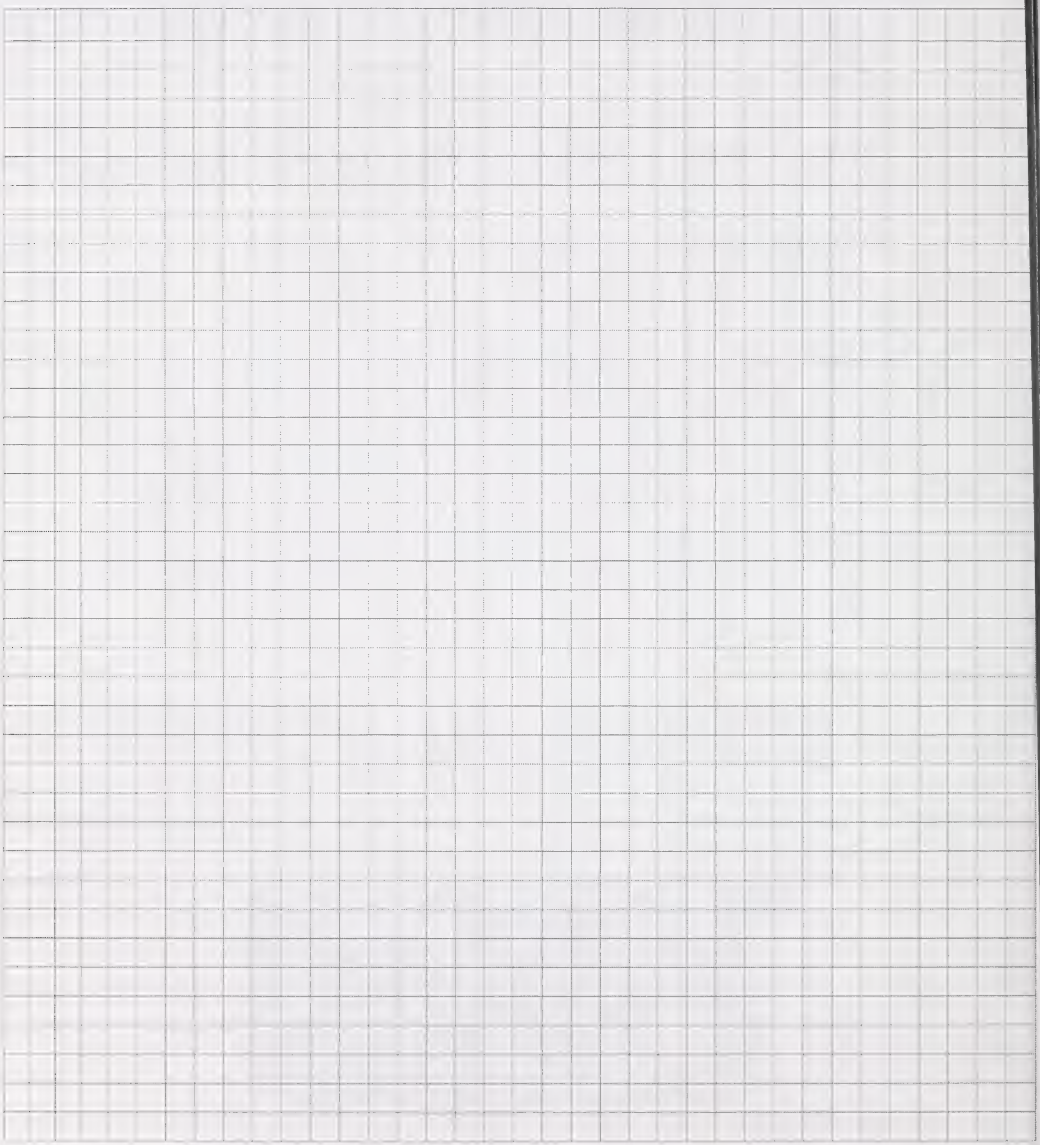
2. 

3. 

4. 

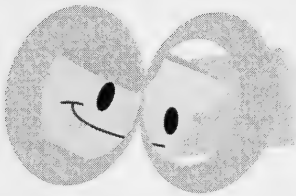
5. Cameron used a piece of grid paper to estimate the area of his cell phone. What do you think his estimate was?





Lesson 6

Area



Let's Explore

Exploration 1: Area and Perimeter

Materials: 2 sheets of Centimetre grid paper, Pencil

1. Create all rectangles that have a perimeter of 16 on the centimetre grid paper.

2. Record the side lengths, perimeter and area of each rectangle.

Side 1	Side 2	Perimeter	Area

3. Create all rectangles that have a perimeter of 24 on the centimetre grid paper.

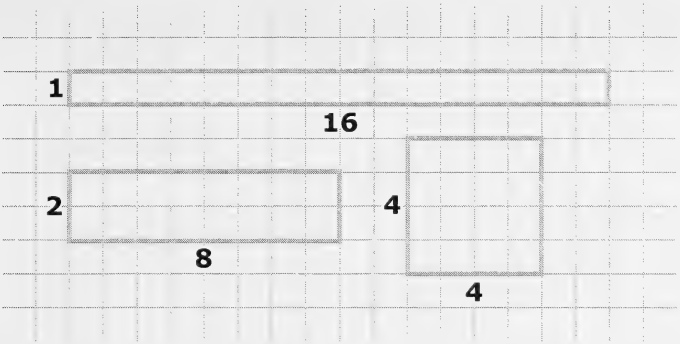
4. Record the side lengths, perimeter and area of each rectangle.

Side 1	Side 2	Perimeter	Area

5. What do you notice about the relationship between the side lengths as the area gets larger?

6. What do you notice about the relationship between the side lengths as the area gets smaller?

The following shapes all have an area of 16. Do they have the same perimeter?



7. Find the perimeter of each figure.

8. Complete the table for the given figures.

Side 1	Side 2	Perimeter	Area

9. Create all rectangles that have an area of 36 cm^2 on your grid paper.

10. Find the perimeter of each and record all values in the table.

Side 1	Side 2	Perimeter	Area

11. What do you notice about the relationship between the side lengths as the perimeter gets larger?

12. What do you notice about the relationship between the side lengths as the perimeter gets smaller?

Let's Practice

1. What is area?

For 2 – 6: Construct all rectangles that have an area of:

2. 36 cm^2

3. 28 mm^2

4. 18 cm^2

5. 42 cm^2

6. 20 mm^2

7. A garden has a perimeter of 14 m. How many rectangles can you draw with this perimeter? Which rectangle has the most area? Use centimetre grid paper (found at the back of this Unit in your Workbook) to construct your rectangles and record the measures in the table.

Side 1	Side 2	Perimeter	Area

The rectangle with the largest area has sides of length:
_____ and _____.

8. A new store is being built and it is going to have sides of lengths 15 m and 30 m. What is its area?

9. List two examples of rectangles with the same area, but with different side lengths.

10. The length of one side of a rectangle is 20 cm. The area of the rectangle is 100 cm^2. Can you determine the other side length of the rectangle from this information? How?

11. A garden has an area of 40 square metres. What is the largest perimeter the garden could possibly have?

12. Reflect: Explain the difference between area and perimeter.

Mixed Review

For 1 – 4: Write a fraction for the shaded region of each model.

1.

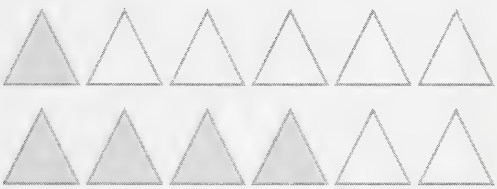
_____

2.

_____

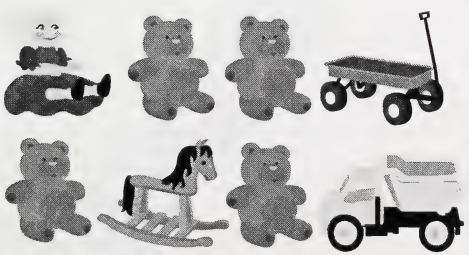
3.

_____

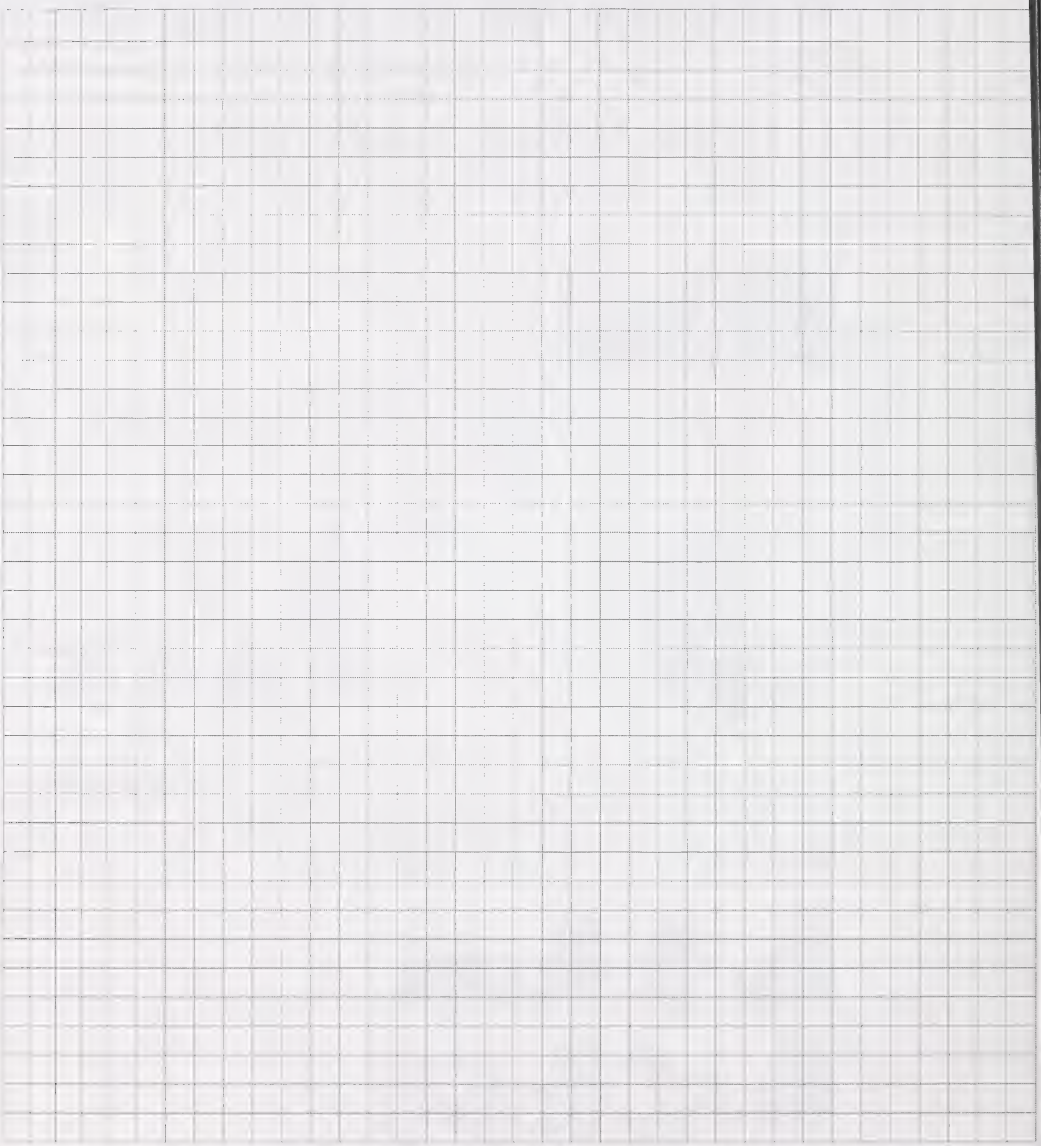
4. 

_____

5. What fraction of the toys are bears?



_____



Lesson 7

Properties of 2-D Shapes

Let's Explore

Exploration 1: Parallel lines

Materials: Paper, Pencil, Ruler

1. Trace the following line segments on your own paper.

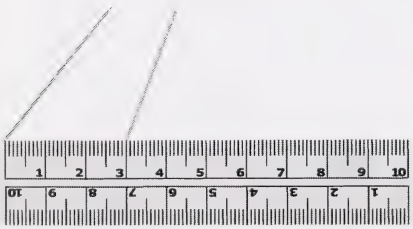
2. Take your ruler and extend the line on the left.

3. Extend the other line.

4. What happens to the lines? Can you make them intersect?

5. What did you have to do with your ruler to move to the second line?

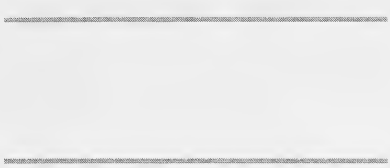
6. Use your ruler to measure between the endpoints on the bottom. Record your measures on your paper.



7. Use your ruler to measure between the endpoints on the top. Record your measures on your paper.

8. Reflect: What do you notice about the two measurements? What does this tell you about these two line segments?

9. Trace the following line segments on your own paper.



10. Take your ruler and extend each line like you did in number 2.

11. What happens to the lines? Can you make them intersect?

12. What did you have to do with your ruler to move from one line to the other? How is this different from what you had to do with the other two lines?

13. Use your ruler to measure between the endpoints on the left. Record your measures on your paper.

14. Use your ruler to measure between the endpoints on the right. Record your measures on your paper.

15. Reflect: What do you notice about the two measurements? What does this tell you about these two lines?

16. Reflect: What are the properties of parallel lines? How are they different from intersecting lines?

Exploration 2: Parallel, Intersecting and Perpendicular Segments in Polygons

Materials: Page of Polygons from the back of this Unit in your Workbook, Scissors, Ruler or straight edge, Pencil, Paper

Procedures:

1. Cut out all of the polygons.
2. Take one polygon and lay it on your paper.
3. Trace two sides of the polygon that you think are parallel.
4. Lift the pattern and see if your lines are parallel. You can use a ruler and your pencil to extend the lines to see if they will intersect.

5. Check to see if any other sides of the polygon are parallel in the same manner.

6. Use the table found after question 11 to record the number of side pairs that are parallel.

7. Check to see if any of the sides are perpendicular.

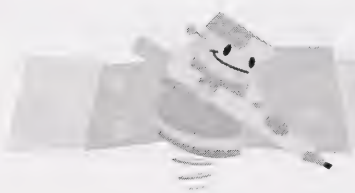
8. Use the table to record the number of pairs of sides that are perpendicular (this is the number of right angles in the figure).

9. Repeat for each polygon.

10. Reflect: Which polygons have parallel lines? Which polygons have perpendicular lines?

11. Reflect: How can you use this information to tell what type of polygon a 2-D figure is?

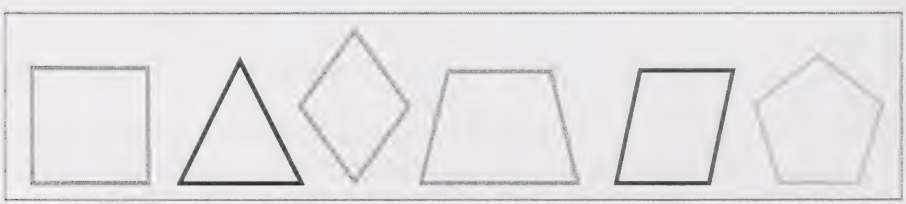
Shape	Number of Pairs of Parallel Sides	Number of Pairs of Perpendicular Sides
Trapezoid		
Parallelogram		
Trapezoid 2		
Triangle		
Square		
Rhombus		
Octagon		
Pentagon		
Triangle 2		
Hexagon		
Rectangle		
Parallelogram 2		



Let's Practice

1. Sort the figures into the Carroll diagram according to the attributes:

Parallel Sides No Parallel Sides



Parallel Sides	No Parallel Sides

For 2 – 4: Connect the endpoints of the line segments given to form a polygon.

a. Name the polygon.

b. Are the new segments parallel?

2. a. _____ b. _____

_____

_____

3. a. _____ b. _____

4. a. _____ b. _____

For 5 – 8: Use a magazine or the Internet to find examples for the following.

5. Find three examples of parallel lines.

6. Find three examples of perpendicular lines.

7. Find three examples of vertical lines.

8. Find three examples of horizontal lines.

9. Draw a pentagon that has at least one pair of parallel sides.

10. Draw a trapezoid that has at least one pair of perpendicular sides.

11. Draw a parallelogram that has at least one pair of perpendicular sides.

12. Draw a hexagon that has at least one pair of parallel sides.

13. Reflect: Daksha says that it is not possible to draw a pentagon with a pair of sides that are parallel and congruent. Is he right or wrong? Why?

Mixed Review

1. Draw a hexagon.

2. Draw a pentagon.

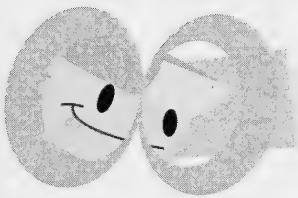
3. Solve: $x + 8 = 12$

4. Solve: $y - 10 = 4$

5. Solve: $10z = 50$

Lesson 8

Parallelograms



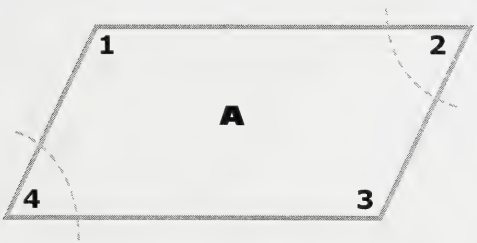
Let's Explore

Exploration 1: Angle Attributes of Parallelograms

Materials: Scissors, Pencil, Page of parallelograms from the back of this Unit in your Workbook

1. Cut out the parallelograms on the page found at the back of this Unit in your Workbook.

2. Rip corners 2 and 4 off of Parallelogram A as shown:



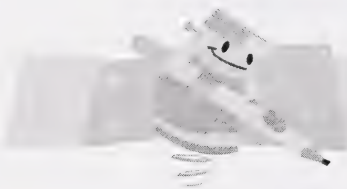
3. Now overlap Angles 2 and 4 so that they match up – or not. Do the edges of the angles overlap? If so, they are congruent.

4. Repeat the test on Angles 1 and 3.

5. Repeat the test on Parallelograms B and C.

6. Are opposite angles always congruent?

7. Are there any other observations you can make about angles in a parallelogram?



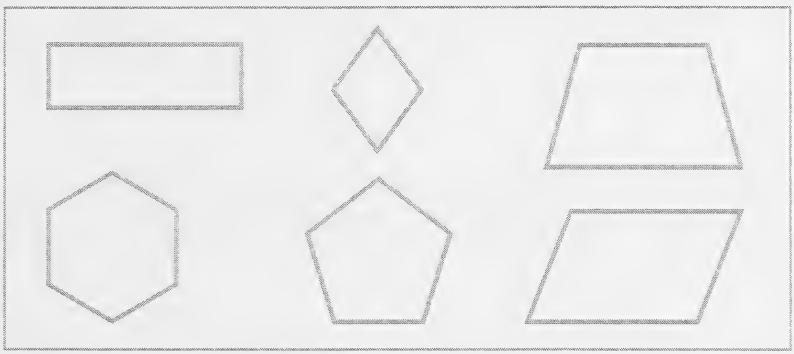
Let's Practice

1. Draw a parallelogram and explain in words why it is a parallelogram.

2. Which of the following is NOT an attribute of parallelograms?

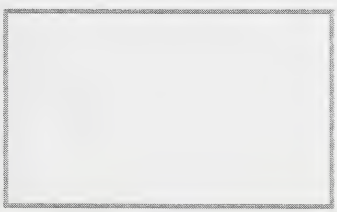
   a. Opposite angles are congruent.
   b. Opposite sides are congruent.
   c. All sides are congruent.
   d. Opposite sides are parallel.

3. Which of the following has at least one pair of opposite sides that are parallel and congruent? Circle the answers.



For 4 - 10: Measure the sides of the quadrilaterals in centimetres and mark them on the figure.

4.



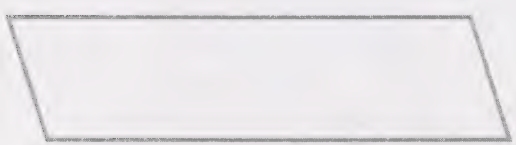
5.

6.

7.

8.

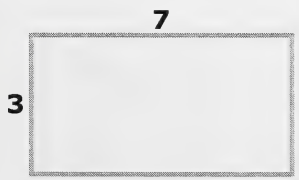
9.

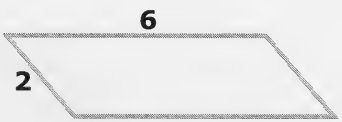
10. 

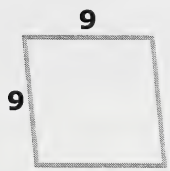
11. Reflect: In 4 – 10, did you find any that were not parallelograms? Which attribute did you use to determine your answer?

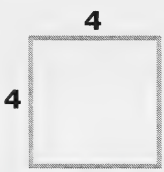
12. Reflect: Alyssa says that she can draw a rectangle that has only one pair of opposite sides that are congruent. Is she right or wrong? Why?

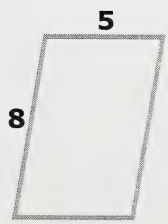
For 13 - 18: Find the perimeter of the given parallelograms.

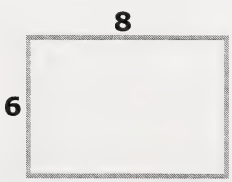
13. 

14. 

15. 

16. 

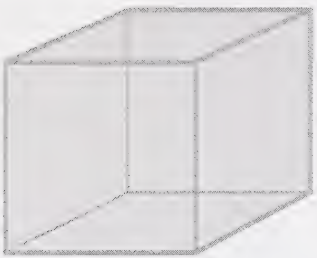
17. 

18. 

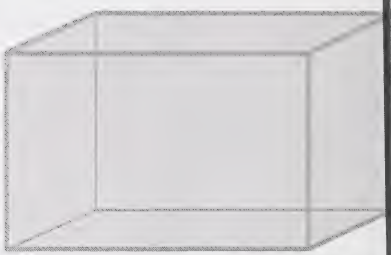
Mixed Review

For 1 - 4: What is the name of the given prism?

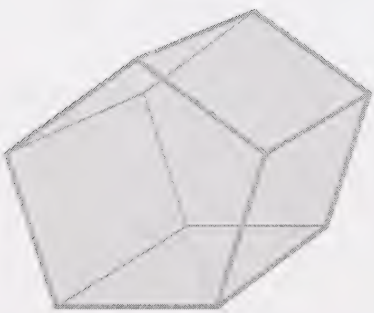
1. _____



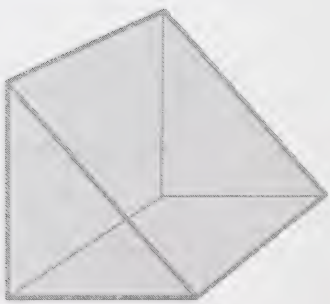
2. _____



3. _____



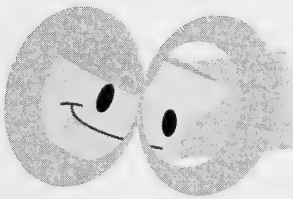
4. _____



5. How many lines of symmetry does a square have?

Lesson 9

Trapezoids



Let's Explore

Exploration 1: Can I Make a Trapezoid?

Materials: Spaghetti noodles (uncooked), Paper, Pencil

Procedures:

1. Take two spaghetti noodles and make sure they are congruent (the same size and shape). These noodles become your given side lengths.
2. Put these noodles on your blank paper so that they are parallel.
3. Use your pencil to connect the endpoints to form a quadrilateral. This means you will make two segments to connect these that do not cross.
4. What is the name of your quadrilateral?

5. Is it possible for you to make a trapezoid if these two sides are congruent and parallel? Describe why it is or is not possible to make a trapezoid with these parallel and congruent sides.

   Hint: shift them around to see if you can create a trapezoid—but they have to be parallel.

6. Now take your noodles and make them consecutive. This means to put the endpoint of one to the endpoint of the other.

7. Now is it possible to create a trapezoid? You may need to use your straight edge to make sure the two new segments are straight.

8. Describe the figure you created in number 7 and explain why it is or is not a trapezoid.

Exploration 2: Tabletop Pattern

Materials: Scissors, Paper, Glue, Crayons, Page of shapes from the back of this Unit in your Workbook, Centimetre grid paper from the back of this Unit in your Workbook

1. Cut out all of the shapes on the page of shapes from the back of this Unit in your Workbook.
2. Can you create a trapezoid using a square tile and a triangle? Sketch it below if you can.
3. Can you create a trapezoid using a square tile and two triangles? Sketch it below if you can.
4. Use your tiles to create a tabletop pattern. The table you are covering is in the shape of a rectangle. You should have no gaps or holes in your pattern.
5. Glue the shapes to your paper.
6. Use centimetre grid paper and crayons to show your pattern.
7. What quadrilateral shapes can you identify in your pattern? List them all.

Lesson 9: Trapezoids

Let's Practice

1. A trapezoid is a quadrilateral with one pair of opposite sides that are _____ .

2. Circle the parallel sides in this quadrilateral:

3. Which of the following is NOT a trapezoid?

A.

B.

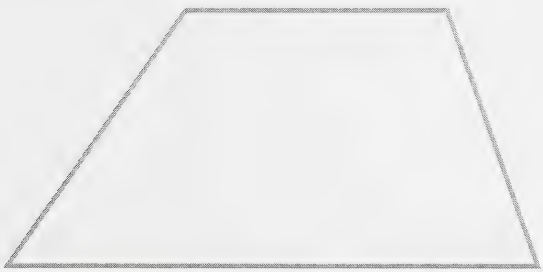
C.

D.

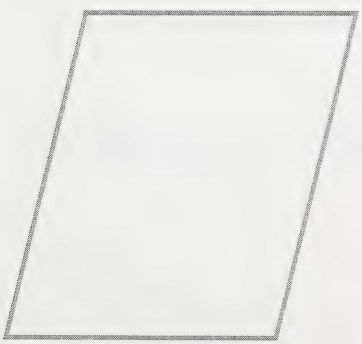
4. Draw a figure with one pair of opposite sides that are parallel.

5. Draw a figure with one pair of opposite sides that are congruent.

6. What shapes combine to form the trapezoid shown:



7. What shapes combine to form the parallelogram shown?



For 8 – 9: Use pattern blocks to answer the following. Sketch your answer or describe it in words.

8. How can you use a rhombus and a triangle to form a trapezoid?

9. What shape can you make using two trapezoids?

10. Make a rectangle using a combination of blocks. Sketch your rectangle here:

11. Reflect: How is a trapezoid similar to and different from a parallelogram?

Mixed Review

For 1 – 4: Use the information given to answer the following questions.

Survey Question: What is your favourite sandwich?
Responses: Peanut butter, Ham, Ham, Turkey, Peanut butter, Peanut butter, Ham, Turkey, Turkey, Turkey, Ham, Ham

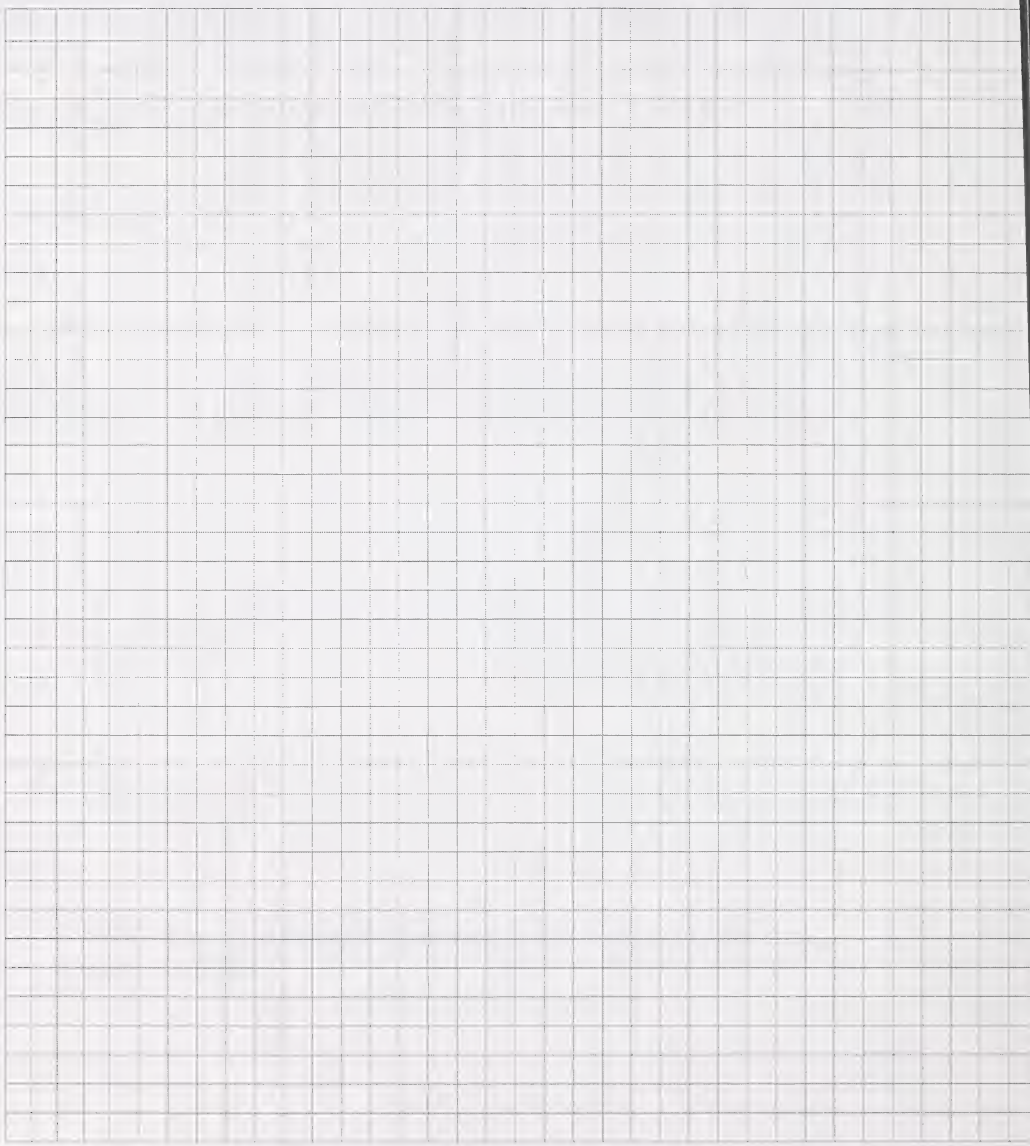
1. Complete the following tally chart.

Favourite Sandwich	Tally	Number
Ham		
Turkey		
Peanut Butter		

2. How many people were surveyed?

3. How many people preferred peanut butter sandwiches?

4. Which sandwich is preferred by the most people?



Lesson 10

Classifying Quadrilaterals

Let's Practice

For 1 – 9: Is the figure a quadrilateral? If it has a special name, write it down.

1. _____

2. _____

3. _____

4. _____

5. _____

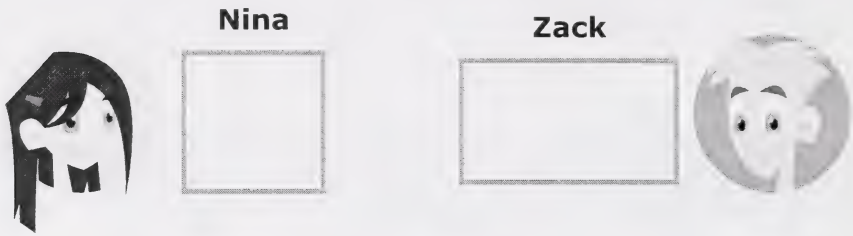
6. _____

7. _____

8. _____

9. _____

10. Nina and Zach each draw "a quadrilateral with opposite sides that are congruent." Here are their answers:



Who is right and why?

11. Draw a quadrilateral with opposite sides that are congruent. If must be different from the answers Nina and Zach gave in question 10.

12. Draw a quadrilateral with one pair of congruent sides.

13. Complete the chart by placing a check mark in each column that has an attribute of the figure named.

	One Pair Opposite Sides Parallel	Both Pair Opposite Sides Parallel	Opposite Sides Congruent	All Sides Congruent	All Angles Right
Trapezoid					
Parallelogram					
Rectangle					
Rhombus					
Square					

14. Lian drew a quadrilateral with opposite sides that are parallel. Which of the figures was NOT Lian's picture?

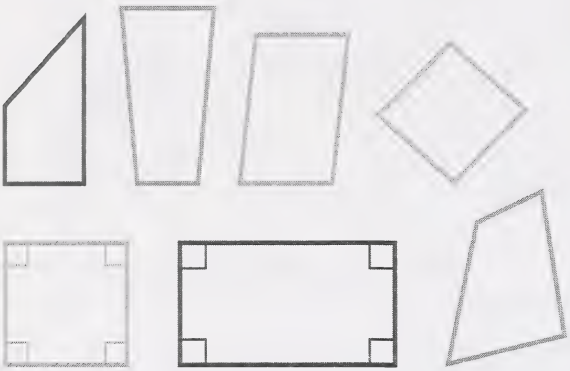
A.

B.

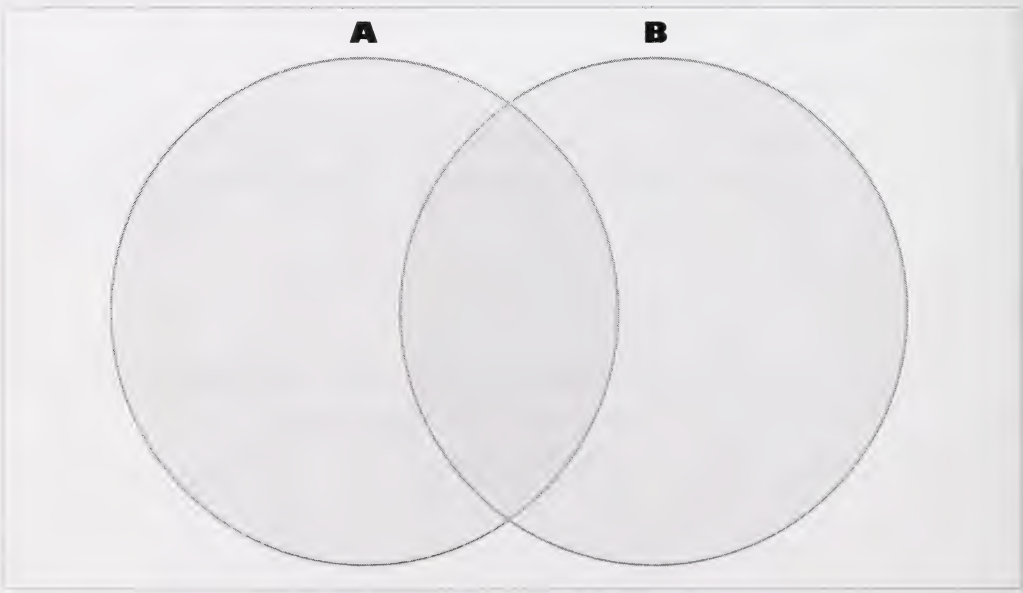
C.

D.

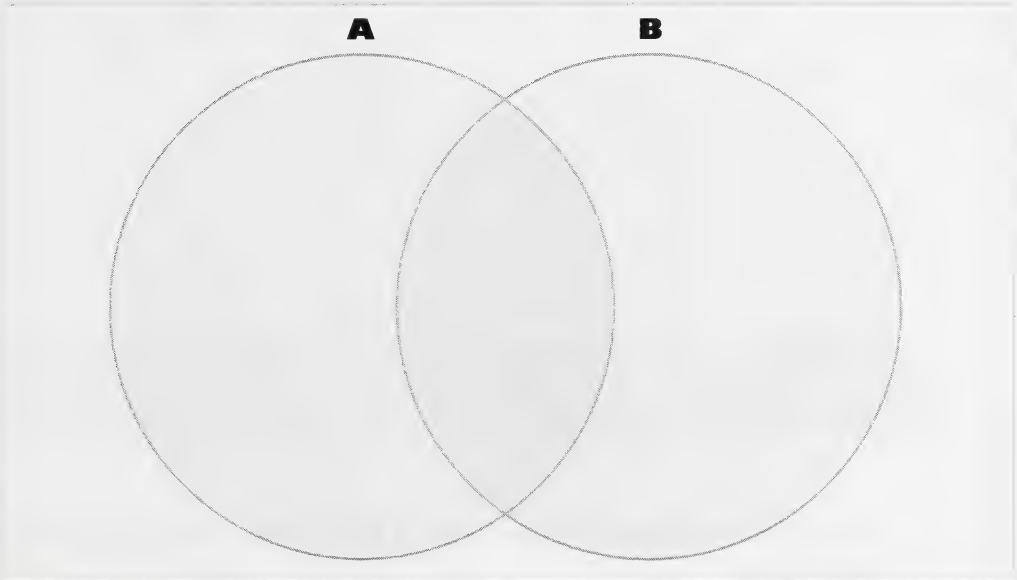
For 15 – 16: Use the quadrilateral cut-outs from the back of your Workbook to complete the Venn diagrams. Draw the figures in each diagram below.



15. A = at least one right angle B = at least one pair of parallel sides



16. A = trapezoid B = at least one right angle



17. Cameron and Alyssa helped to make a rectangular corral for the horses on a ranch. Cameron had four pieces of fencing that measured:

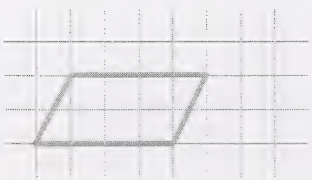
14 metres 18 metres 20 metres 20 metres

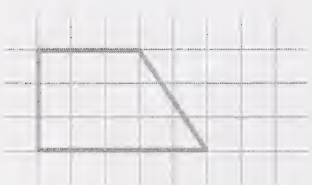
How can Cameron make a rectangle with these pieces of fencing?

18. Reflect: How many special quadrilaterals have opposite sides that are congruent? Name them and describe why they fit that attribute.

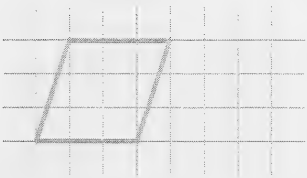
Mixed Review

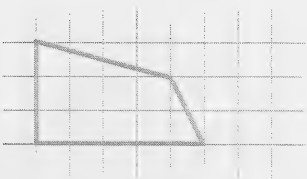
For 1 - 5: Estimate the area of the following using the grid paper they are on.

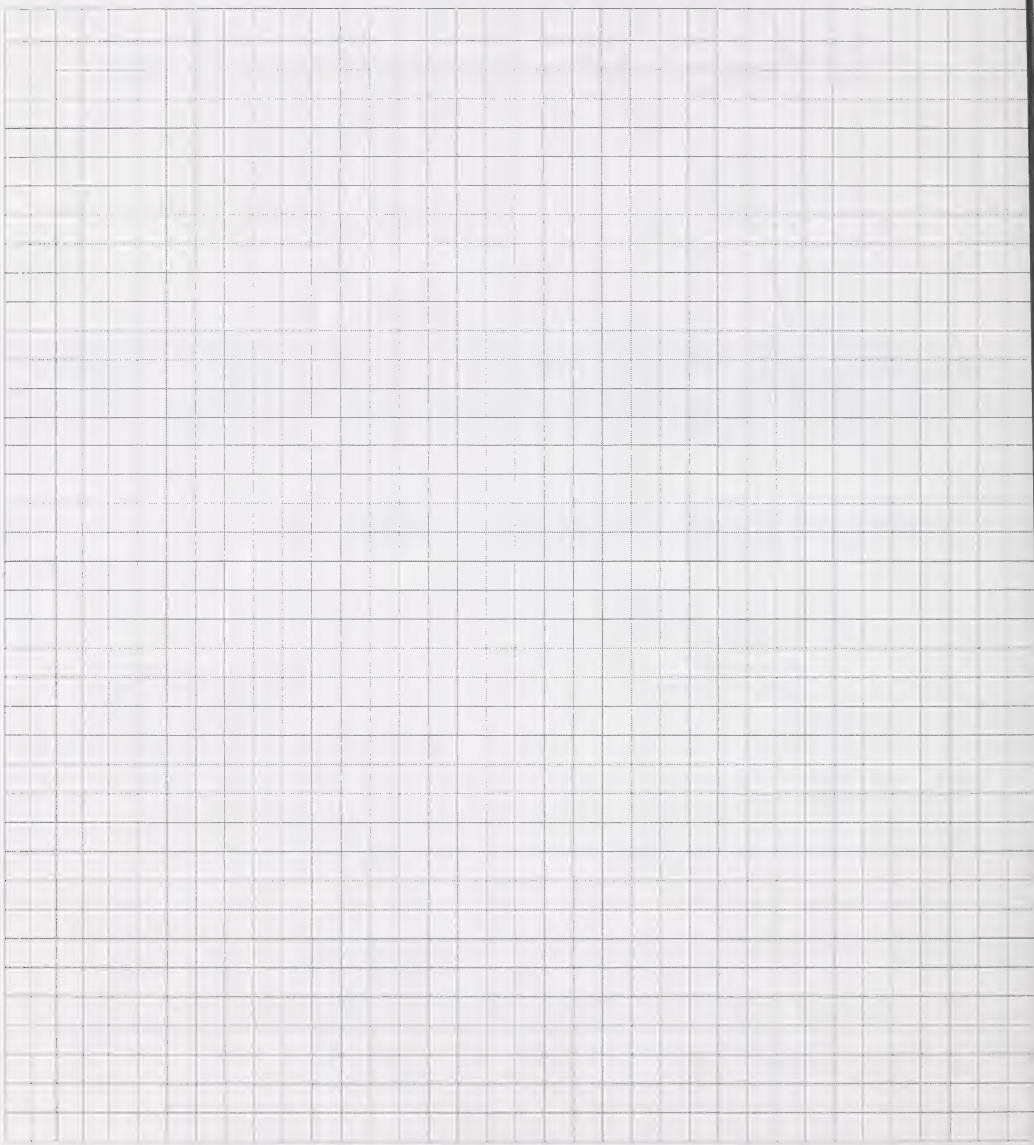
1. 

2. 

3.

4. 

5. 

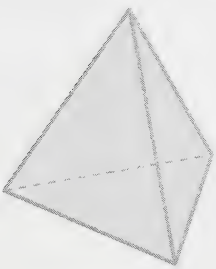


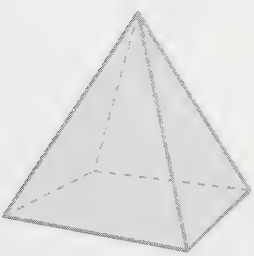
Lesson 11

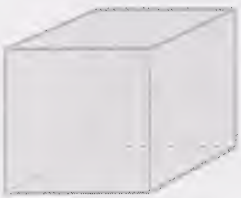
3-D Objects

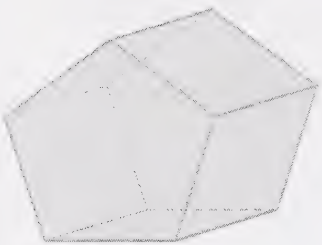
For 1 – 5: Identify each shape as a prism or pyramid.

1.

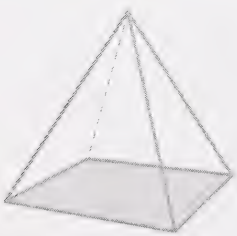
2. 

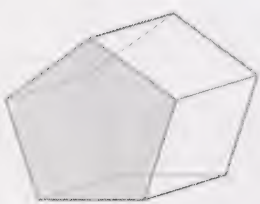
3. 

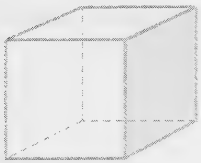
4. 

5. 

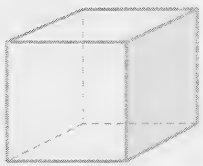
For 6 – 8: Draw an arrow that points to an edge that is perpendicular to the blue edge.

6. 

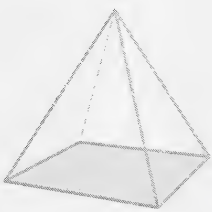
7. 

8. 

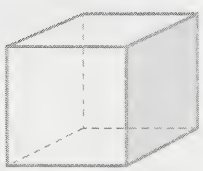
For 9 – 11: Use your pencil to shade the face of the solid that is parallel to the blue face. If there isn't one, write "none."

9. 

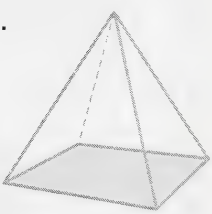
10.

11. 

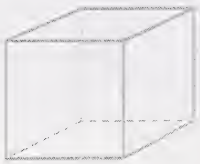
For 12 – 14: Use your pencil to shade the face of the solid that is perpendicular to the blue face. If there isn't one, write "none."

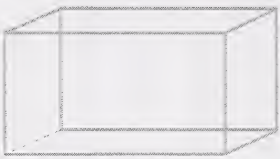
12. 

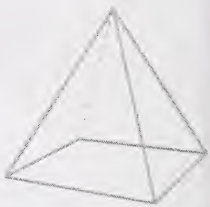
13.

14. 

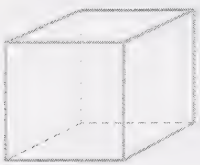
For 15 – 17: Use your pencil to shade the face or faces of the solid that are horizontal. If there are none, write "none."

15. 

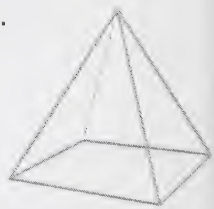
16. 

17. 

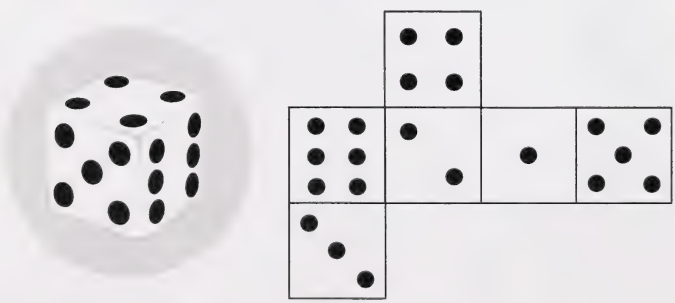
For 18 – 20: Draw an arrow pointing to one edge of the solid that is vertical. If there isn't one, write "none."

18. 

19.

20. 

For 21 – 23: The die shown is a cube. The net of the die is also shown.



21. Which face is parallel to the face marked with 2 dots?

22. Name one face that is perpendicular to the face with 3 dots.

23. Name another pair of faces that are parallel.

For 24 - 26: Look around your home or classroom to answer these questions.

24. Find an object that resembles a cube. Describe the object. Name two parts of the object that are parallel.

25. Find an object that resembles a rectangular prism. Describe the object. Name two parts of the object that are perpendicular.

26. Find an object that resembles a pyramid. Describe the object. Name two parts of the object that are intersecting.

For 27 – 30: Use the Internet or magazines to answer the following questions.

27. Find an object that resembles a prism. Describe the object. Name two parts of the object that are parallel.

28. Find an object that resembles a prism. Describe the object. Name two parts of the object that are perpendicular.

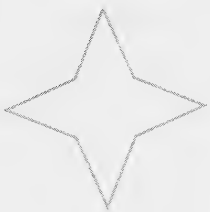
29. Find an object that resembles a prism. Describe the object. Name two parts of the object that are vertical.

30. Find an object that resembles a pyramid. Describe the object. Name two parts of the object that are intersecting.

31. Reflect: What do you find most challenging about identifying parallel and perpendicular parts of solids and why?

Mixed Review

For 1 - 3: Draw all lines of symmetry on the shapes.

1. 

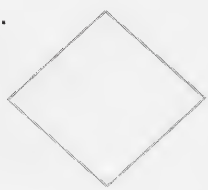
2.

3.

4. Which of the following have more than one line of symmetry?

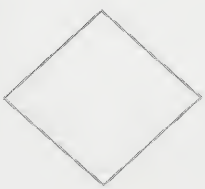
   a.

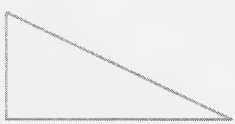
   b.

   c. 

   d.

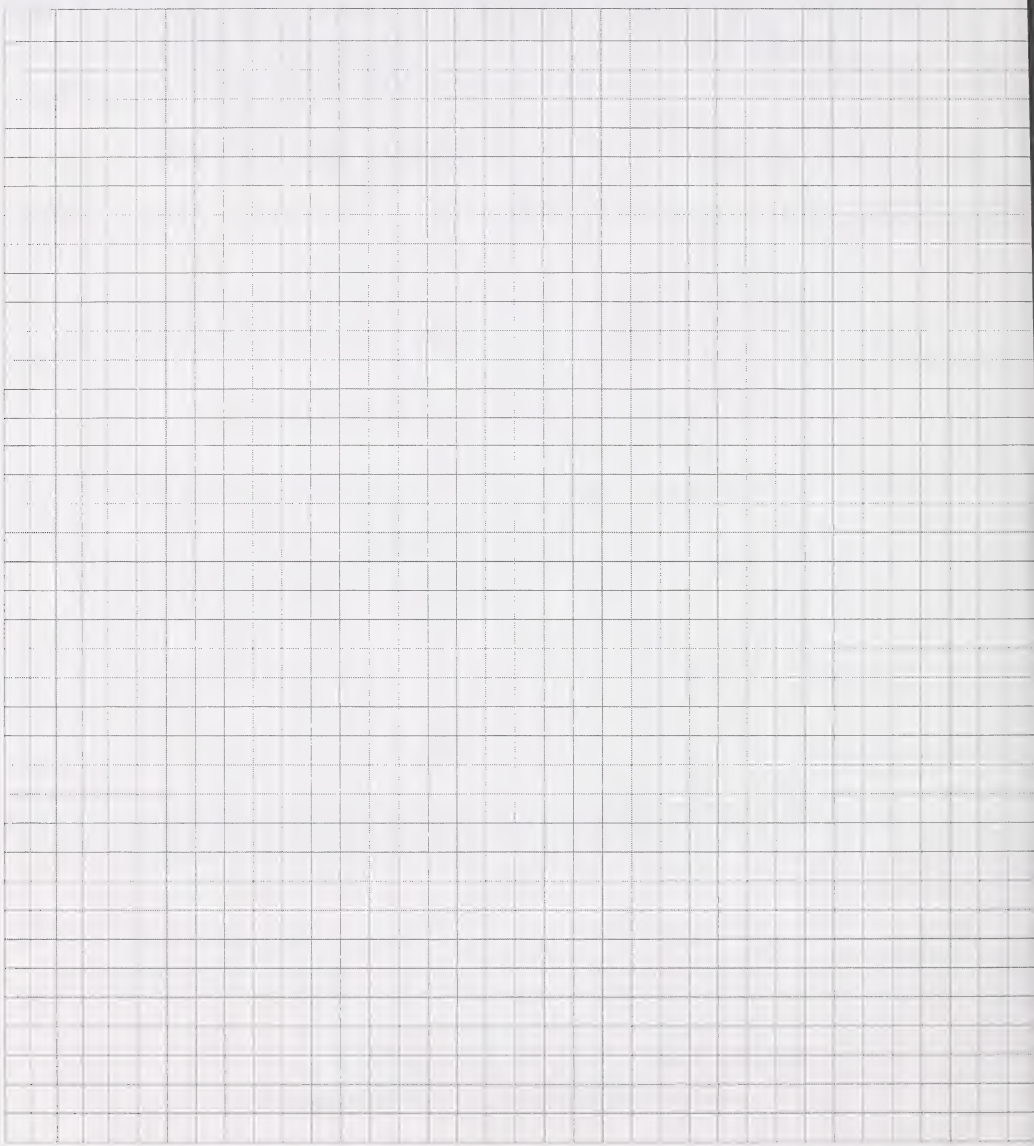
5. Which of the following has no lines of symmetry?

   a. 

   b. 

   c.

   d.



Lesson 12

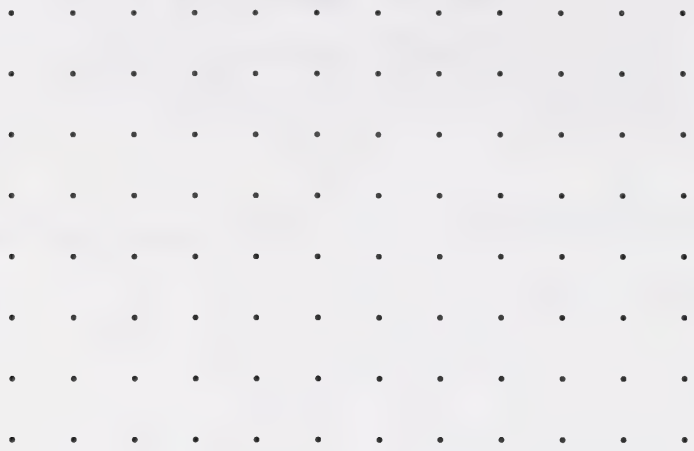
Drawing 3-D Objects

For 1 – 4: Use the dot paper to draw the following prisms and pyramids.

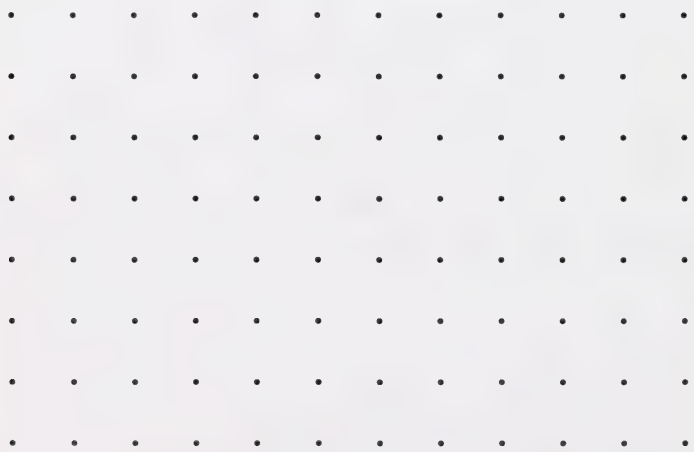
1. a pentagonal prism

2. a rectangular prism with a base that is 5 units by 2 units

3. a square pyramid that has a base that is 4 units by 4 units



4. a cube that has a base that is 5 units by 5 units

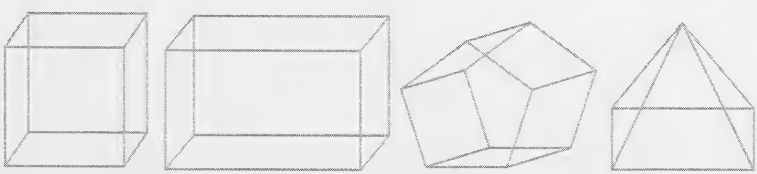


For 5 – 6: Use point perspective to draw a prism with the given base.

5.

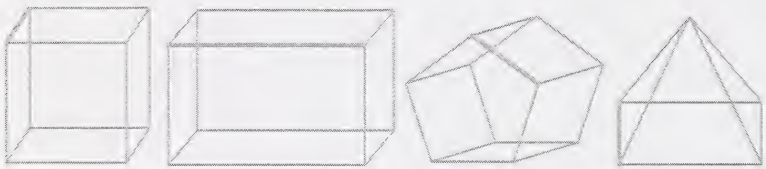
6.

7. Shade the faces that are vertical on each figure. If there are none, write "none."

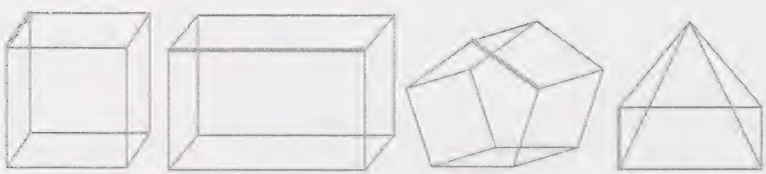


8. Shade the faces that are horizontal on each figure. If there are none, write "none".

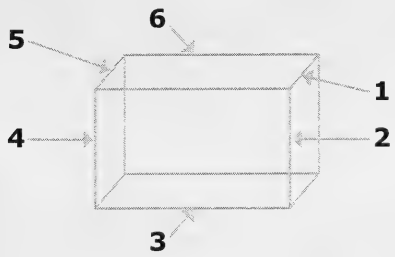
9. Colour an edge that is perpendicular to the orange edge on each figure. If there are none, write "none."



10. Colour all edges that are parallel to the orange edge on each figure. If there are none, write "none."

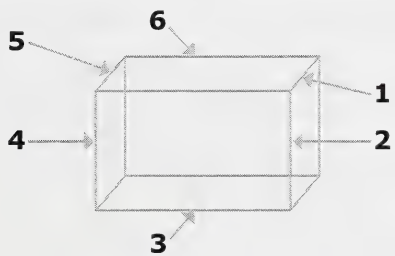


11. Choose the pair of edges that are NOT intersecting.



A. 1 and 2 B. 2 and 3 C. 3 and 6 D. 4 and 5

12. Which labelled edges are vertical?



13. Reflect: Does drawing figures in 3D help you understand 3D objects on paper? Why?

Mixed Review

1. Which of the following is a right angle?

a. b. c. d.

2. Multiply 45 x 14

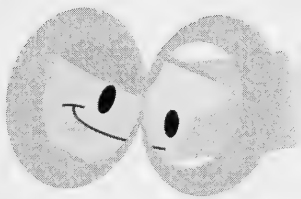
3. Multiply 12 x 18

4. Multiply 20 x 10

5. Multiply 30 x 50

Lesson 13

Translations



Let's Explore

Exploration 1: Translating Objects

Materials: Cut-out shapes from the back of this Unit in your Workbook, Pencil, Scissors, 3 sheets of Centimetre Grid paper from the back of this Unit in your Workbook

1. Cut out the shapes from the back of this Unit in your Workbook.
2. Take Shape 1 and place it on the grid paper so that all of the vertices line up with grid lines that cross.
3. Trace Shape 1 onto your grid paper. You will want to place it near the bottom of the page.
4. Now move Shape 1: 4 units up
5. Trace Shape 1 again. Write "Image 1" beside the image.
6. Now move Shape 1: 5 units right
7. Trace Shape 1 again. Write "Image 2" beside the image.
8. How would you describe the translation of the original position of Shape 1 to Image 1?

9. How would you describe the translation of Image 1 to Image 2?

10. How would you describe the translation of the original position of Shape 1 to Image 2?

11. Place Shape 2 on the grid paper and trace its outline.

12. Have a friend move the shape to a new position. Describe the translation of the original position of Shape 2 to the image.

13. Repeat instructions 11 and 12 with Shape 3.

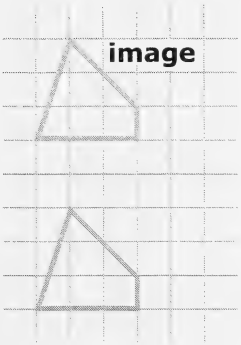
14. Trade with your friend. Move Shape 4 from an original position to an image position. Let your friend describe the translation.

Let's Practice

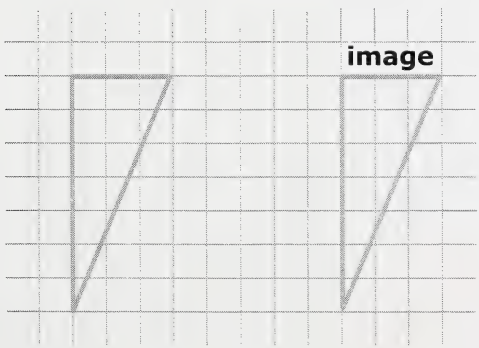
For 1 – 8: Describe the distance and direction for the translation shown.

1. _____

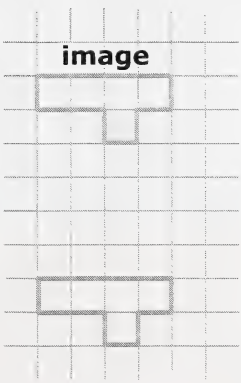
2. _____



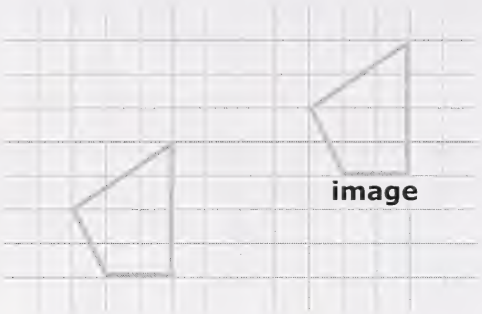
3. _____



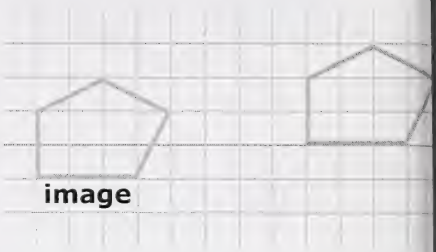
4. _____



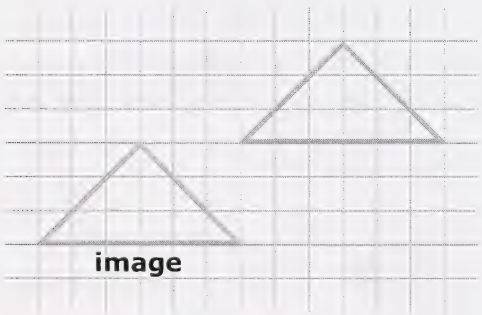
5. _____



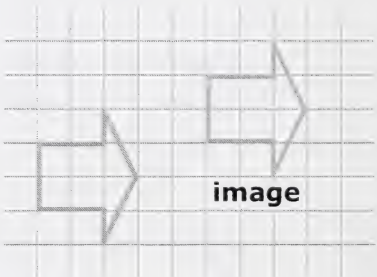
6. _____



7. _____

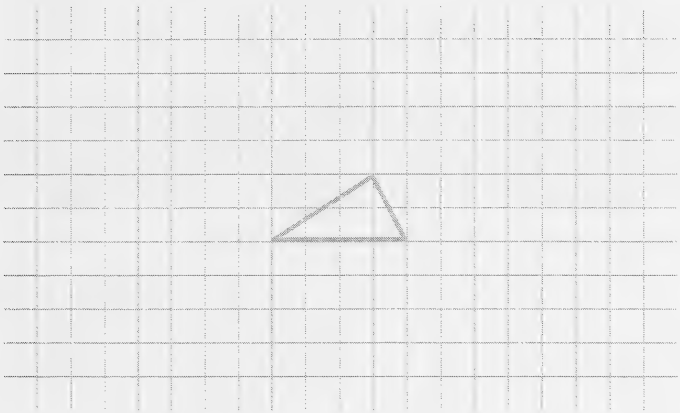


8. _____

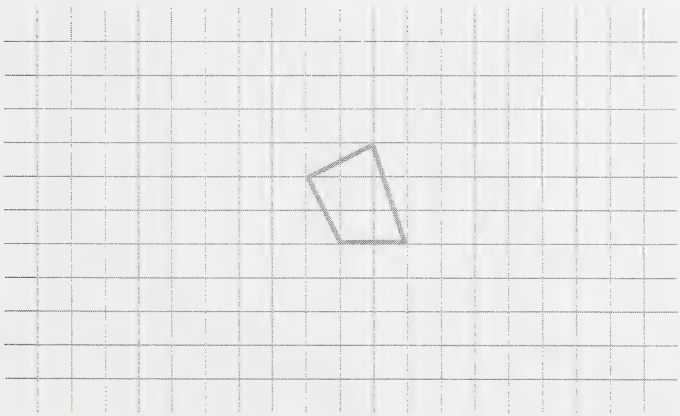


For 9 – 12: Draw the image of the shape for the translation.

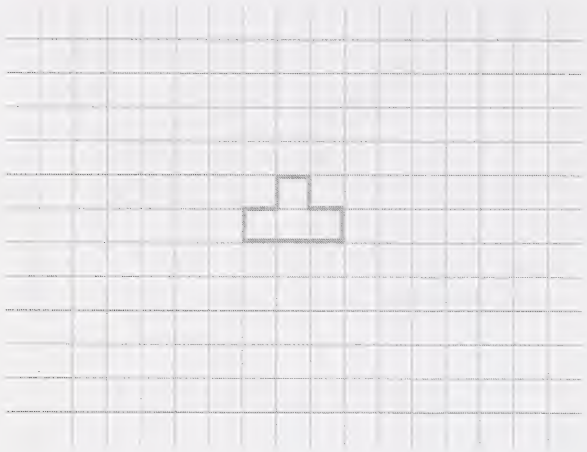
9. 4 units down and 6 units left



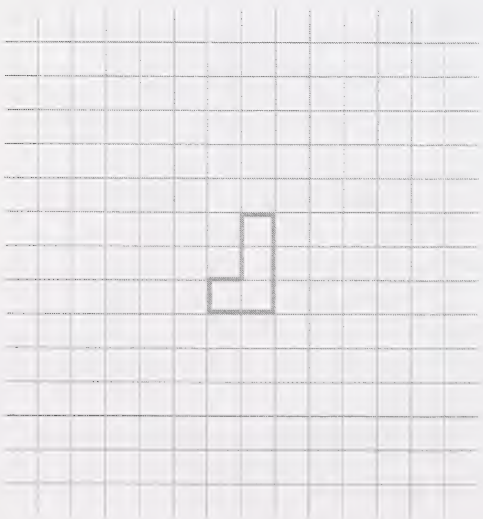
10. 4 units up and 3 units right



11. 5 units down and 1 unit right



12. 6 units up and 4 units left

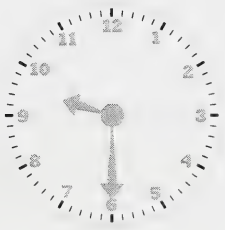


13. Reflect: Describe a real world example of performing a translation.

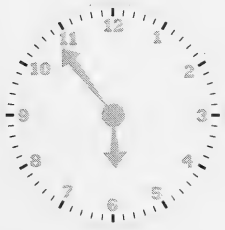
Mixed Review

Write the time.

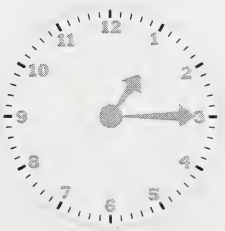
1. _____



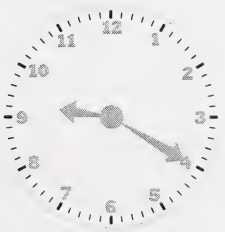
2. _____



3. _____



4. _____



5. _____

6. _____

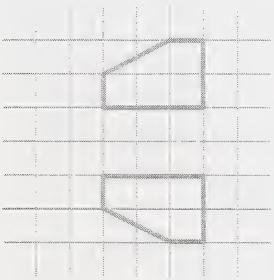
Lesson 14

Reflections

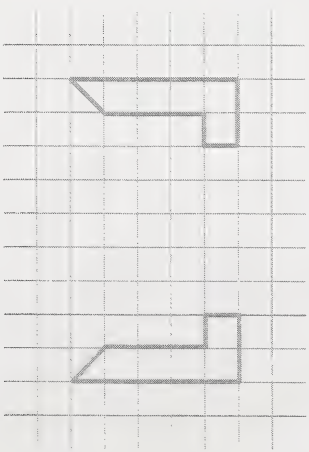
For 1 – 4: Draw the line of reflection for each picture.

1.

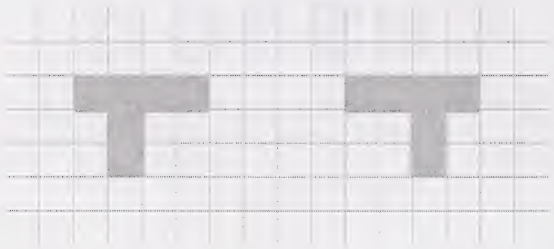
2.



3.

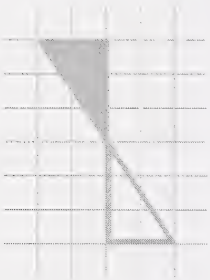


4.

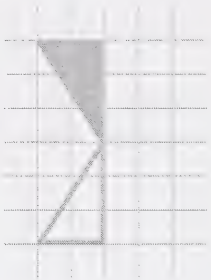


5. Which of the following is a reflection?

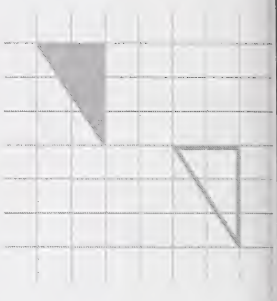
A.



B.

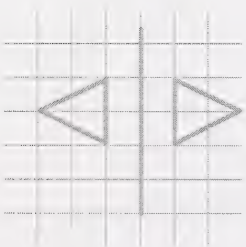


C.

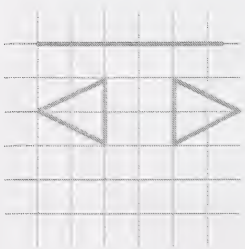


6. Which of the following has the correct line of reflection?

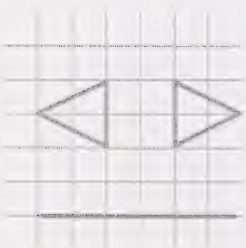
A.



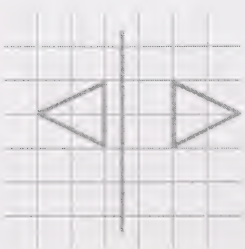
B.



C.

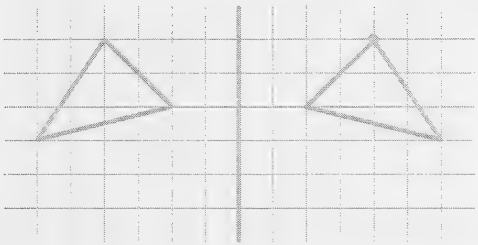


D.

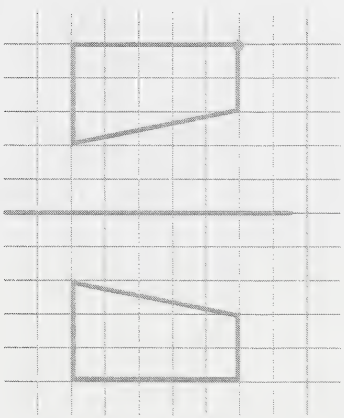


For 7 – 10: How far is the point shown on the image from the line of reflection?

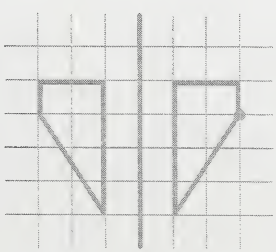
7. _____



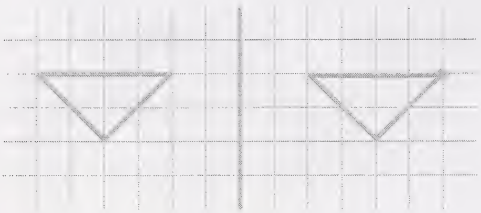
8. _____



9. _____

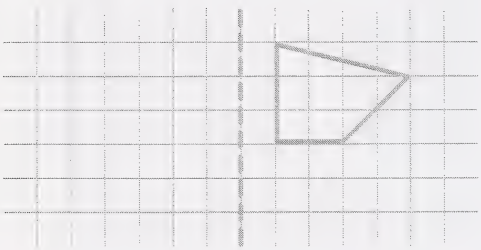


10. _____

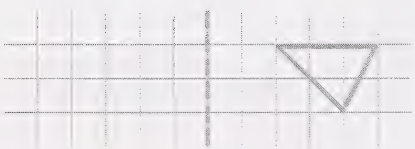


For 11 – 14: Draw the image of the shape over the line of reflection shown.

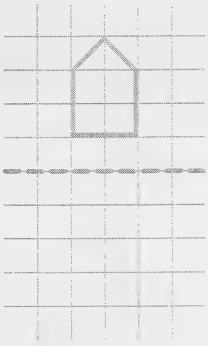
11.



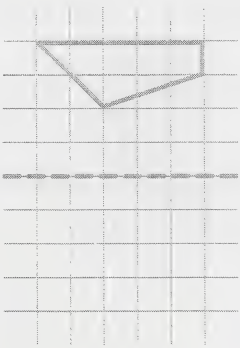
12.



13.



14.

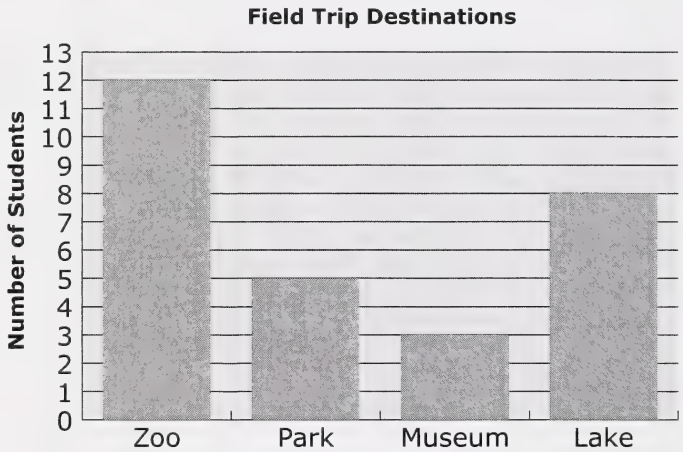


15. Reflect: How is the term "reflection" in math similar to the term "reflection" in reading?

Mixed Review

For 1 – 5: Use the bar graph to answer the following questions.

Mrs. Smith's class was surveyed about where they want to go for the class field trip.



1. How many students were surveyed? _____

2. How many students want to go to the park? _____

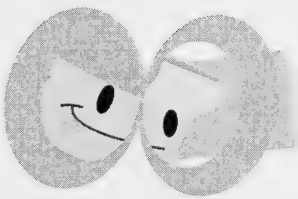
3. How many students want to go to the park or to the museum? _____

4. How many more students want to go to the zoo than to the lake? _____

5. If Mrs. Smith goes to the location that most students voted for, where will they go? _____

Lesson 15

Rotations



Let's Explore

Exploration 1: Rotations

Materials: Cut-out Shapes from the back of this Unit in your Workbook, Pencil, Scissors, Grid paper

Procedures:

1. Cut out the shapes.
2. Take Shape 1 and place it on the grid paper so that all of the vertices line up with grid lines that cross.
3. Trace Shape 1 onto your grid paper.
4. Now rotate Shape 1 a quarter turn clockwise.
5. Trace Shape 1 again. Write "Image 1" beside the image.
6. Now rotate Shape 1 a $\frac{3}{4}$ turn counter-clockwise.
7. Trace Shape 1 again. Write "Image 2" beside the image.

8. How would you describe the rotation of the original position of Shape 1 to Image 1?

9. How would you describe the rotation of Image 1 to Image 2?

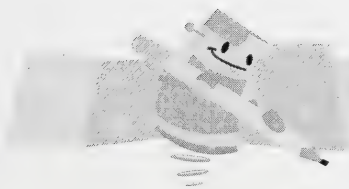
10. How would you describe the rotation of the original position of Shape 1 to Image 2?

11. Place Shape 2 on the grid paper and trace its outline.

12. Have a friend rotate the shape to a new position. Describe the rotation of the original position of Shape 2 to the image.

13. Repeat directions 11 and 12 with Shape 3.

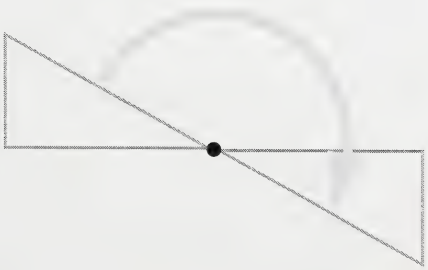
14. Trade with your friend. Move Shape 4 from an original position to an image position. Let your friend describe the translation.



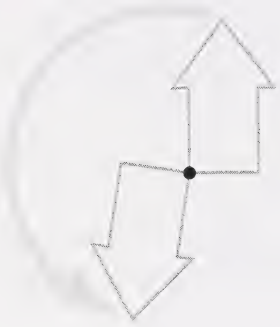
Let's Practice

For 1 - 3: What direction is the turn?

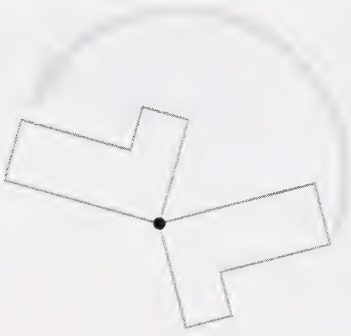
1. _____



2. _____



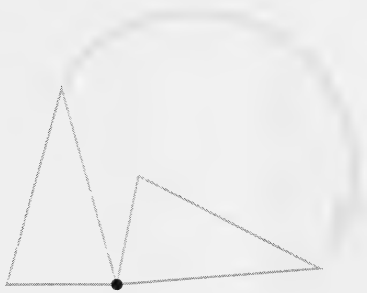
3. _____



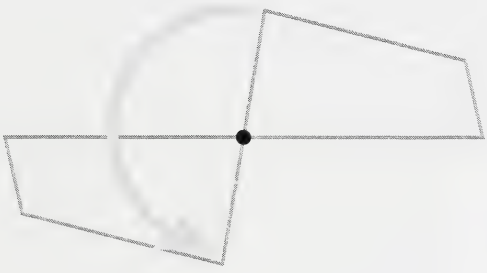
4. _____

For 5 - 7: Describe the rotation using direction and distance.

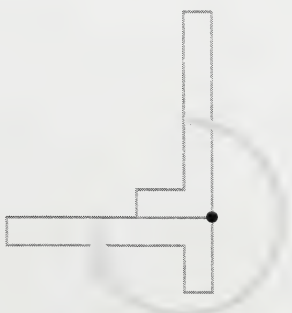
5. _____



6. _____

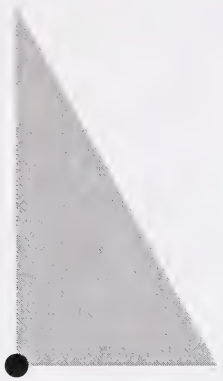


7. _____



For 8 - 9: Rotate the figure the given distance and direction about the point.

8. $\frac{1}{2}$ turn counter-clockwise



9. $\frac{1}{4}$ turn clockwise

10. Reflect: Think of a real world example of a rotation. Describe it here.

Mixed Review

Review your division facts.

1. $36 \div 9$

2. $45 \div 9$

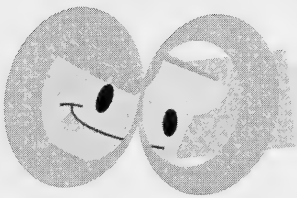
3. $81 \div 9$

4. $72 \div 9$

5. $54 \div 9$

Lesson 16

Identifying Transformations



Let's Explore

Exploration 1: Letters and Transformations

Materials: Pencil, Letters from the back of this Unit in your Workbook, Scissors

1. Cut out the letters. You can cut the rectangle around each. Use your pencil to darken the outline of each letter on the back of the paper.

   a b c d e f g h i j k l m n o p q r s t u v w x y z
   A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

2. Find two lower case letters that are a transformation of the letter d. Describe the transformation of each letter.

3. Which lower case letters can be transformed to create another letter? What transformation must be used to get the new letter?

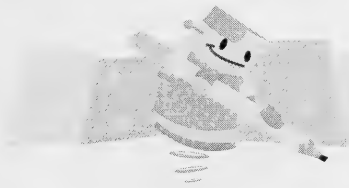
4. Which upper case letters can be transformed to create another letter?

What transformation must be used to get the new letter?

Look at the letter A. If you do a reflection of A over a line of reflection you get the same letter:

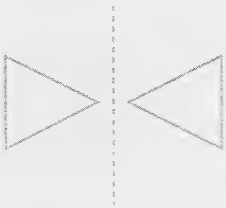
5. What other letters can be reflected to form the same letter?

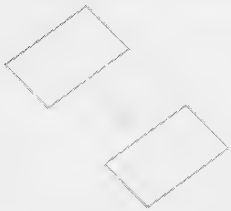
Lesson 16: Identifying Transformations

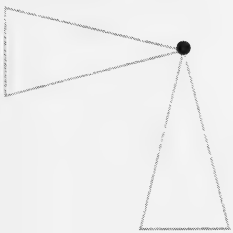


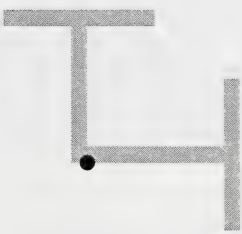
Let's Practice

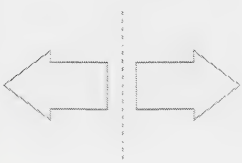
Identify the transformation. Write: Translation, Rotation or Reflection.

1. _____ 

2. _____ 

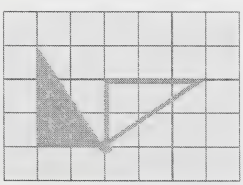
3. _____ 

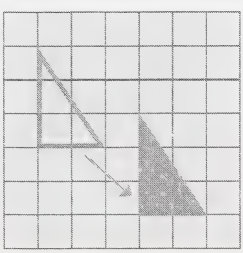
4. _____ 

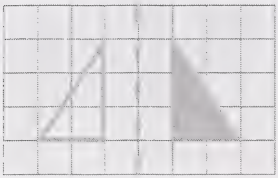
5. _____ 

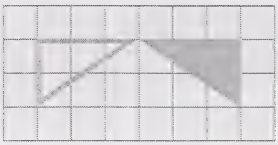
6. _____

7. Which picture shows a translation? The shaded figure is the image.

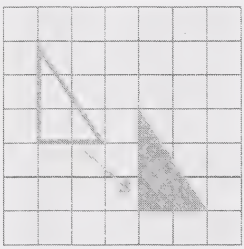
A. 

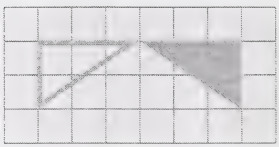
B. 

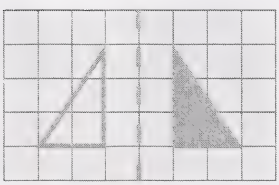
C. 

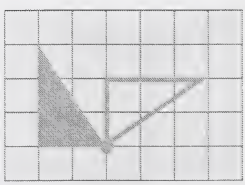
D. 

8. Which picture shows a rotation?

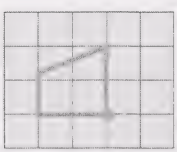
A. 

B. 

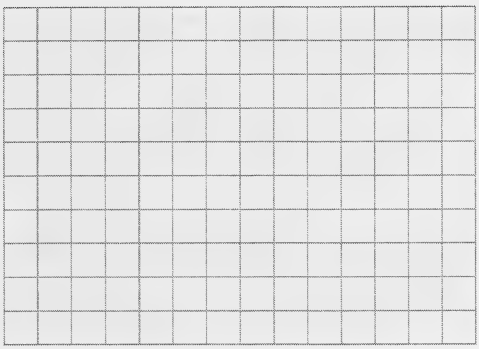
C. 

D. 

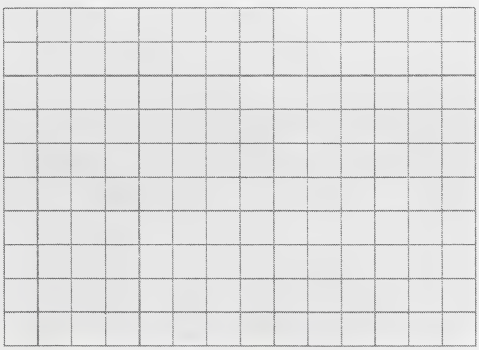
For 9 - 11: Copy the figure into the grids. Complete the given transformation.



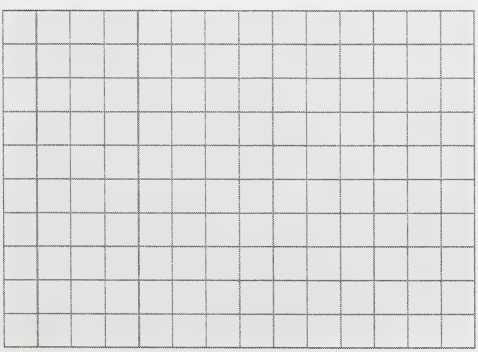
9. half turn clockwise



10. translation: 4 units down 1 unit right



11. reflection



12. What will the next figure in this pattern be? Draw the shape.

13. Reflect: What happens when you translate a figure up four units, then down four units? Why?

Mixed Review

For 1 – 4: Multiply

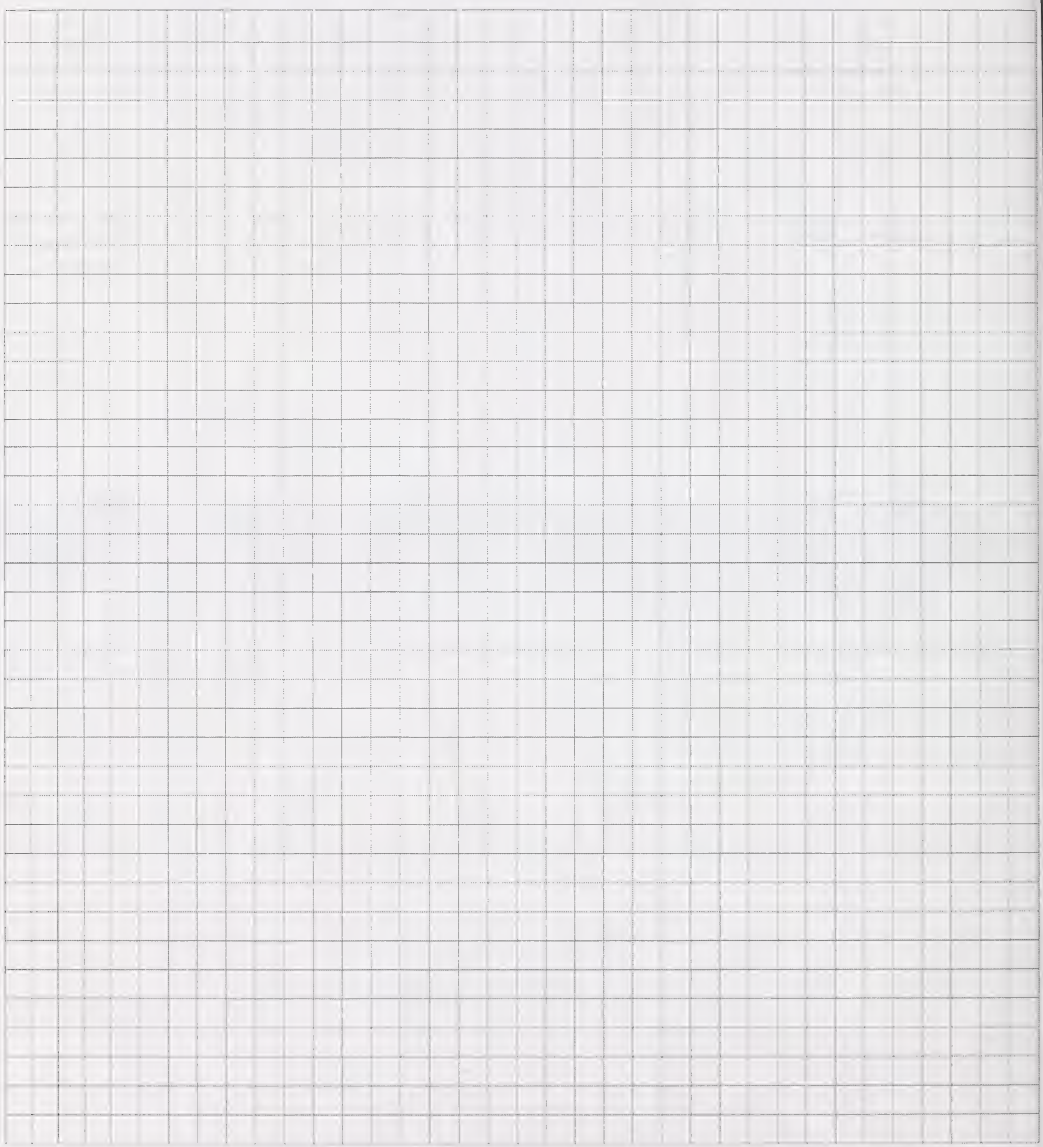
1. 12 x 9

2. 14 x 9

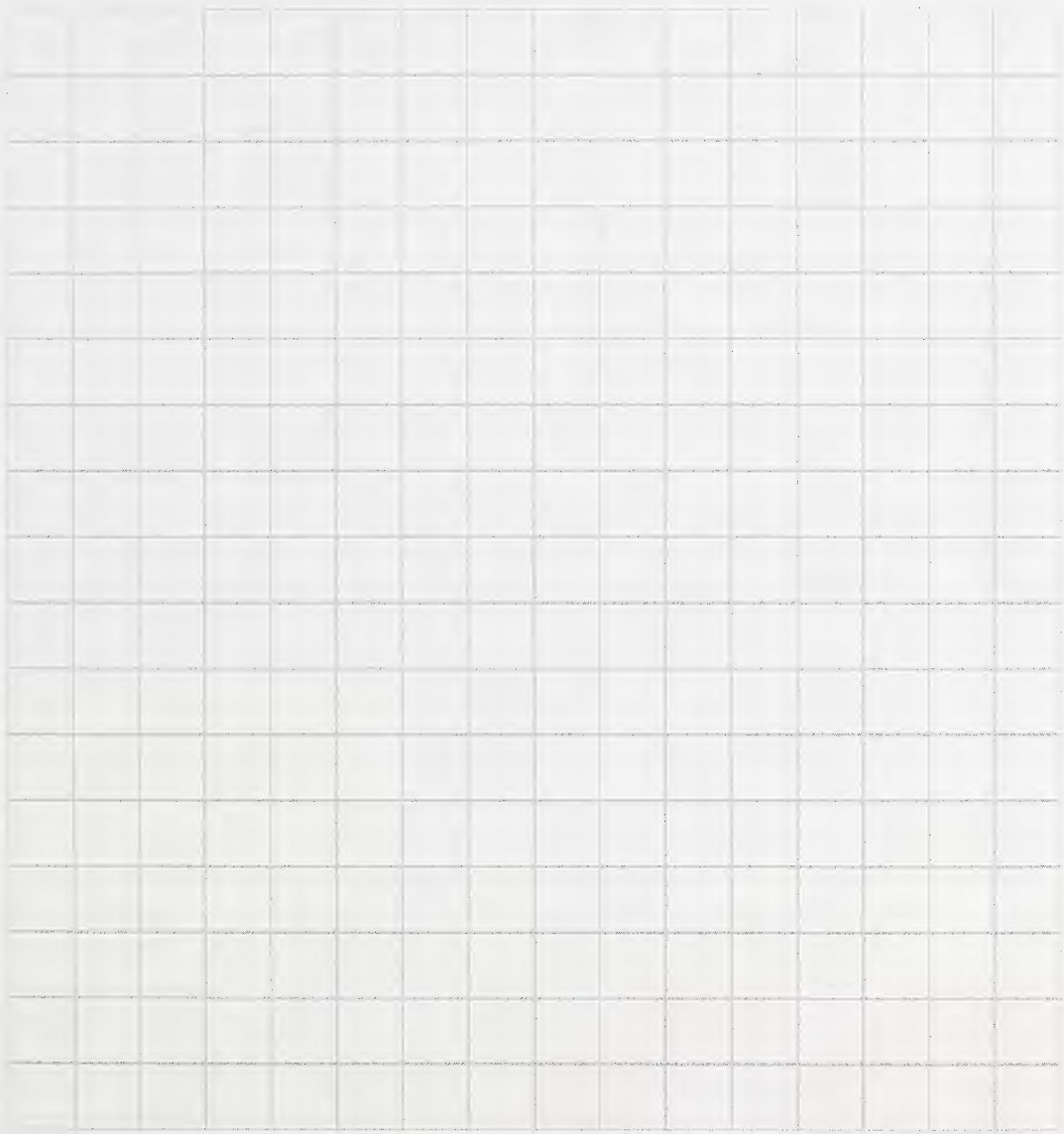
3. 16 x 9

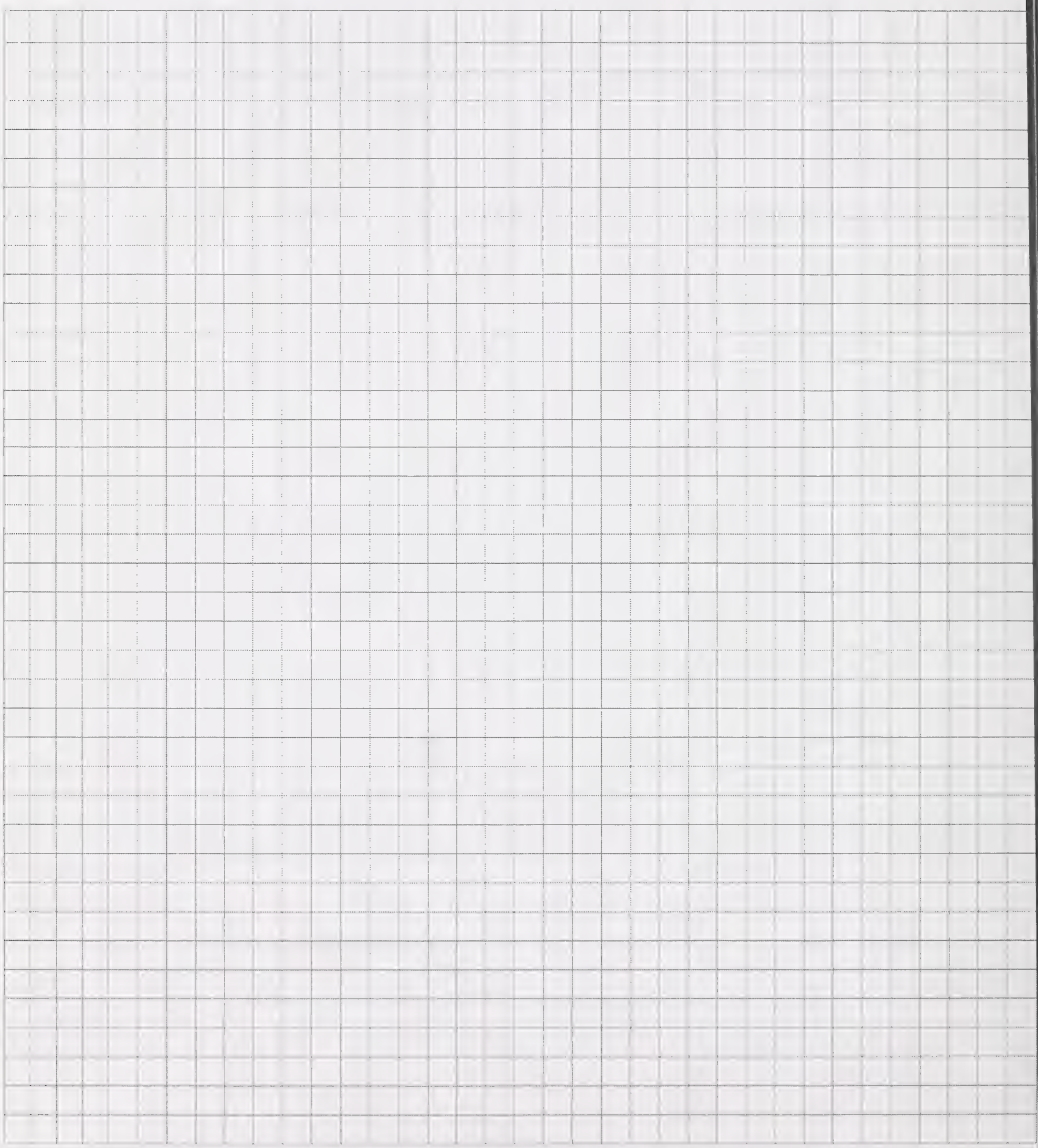
4. 18 x 9

5. Do you notice a pattern to the answers of numbers 1 – 4? Describe the pattern in words. Why do you think these problems generate that pattern?

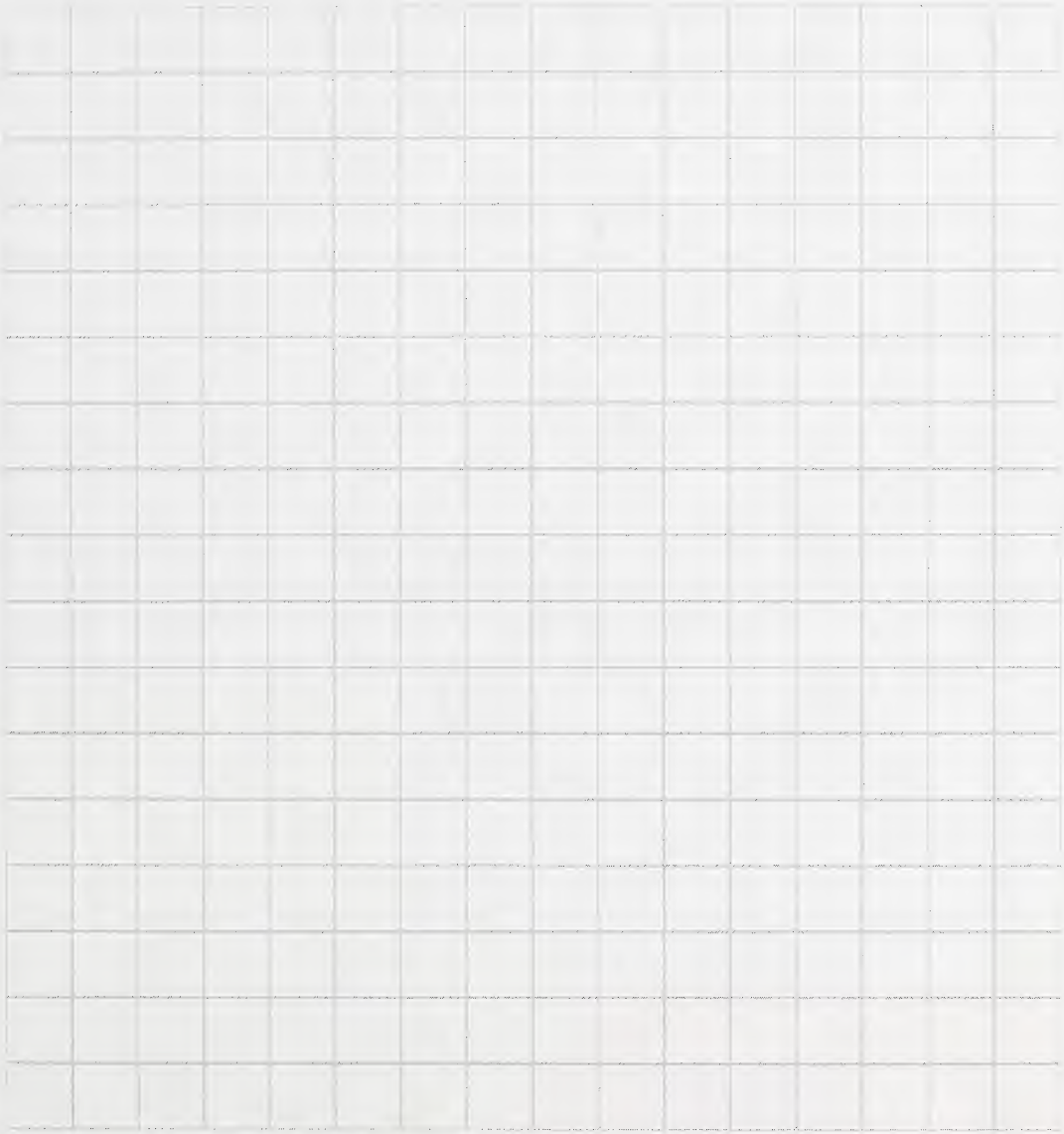


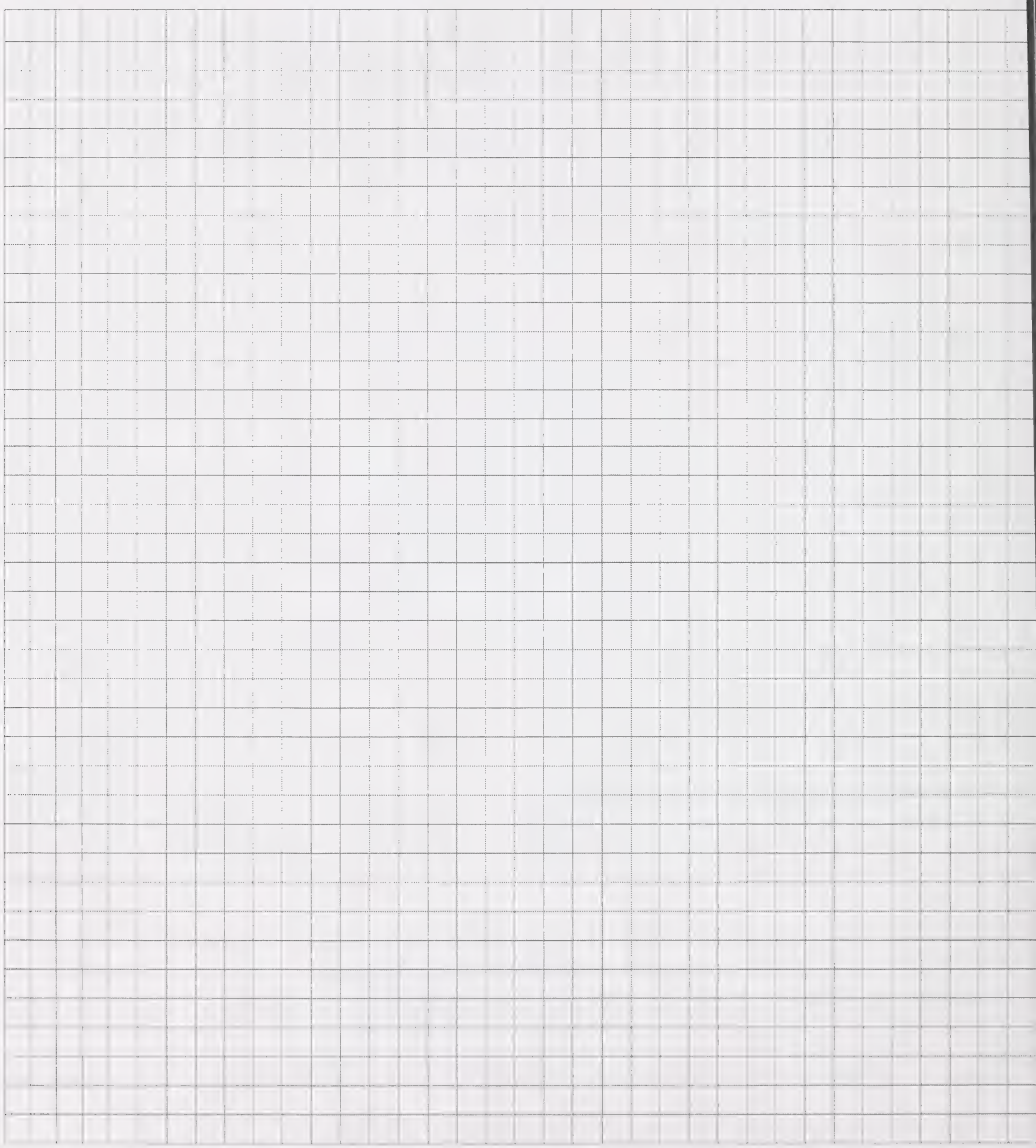
Centimetre Grid Paper





Centimetre Grid Paper





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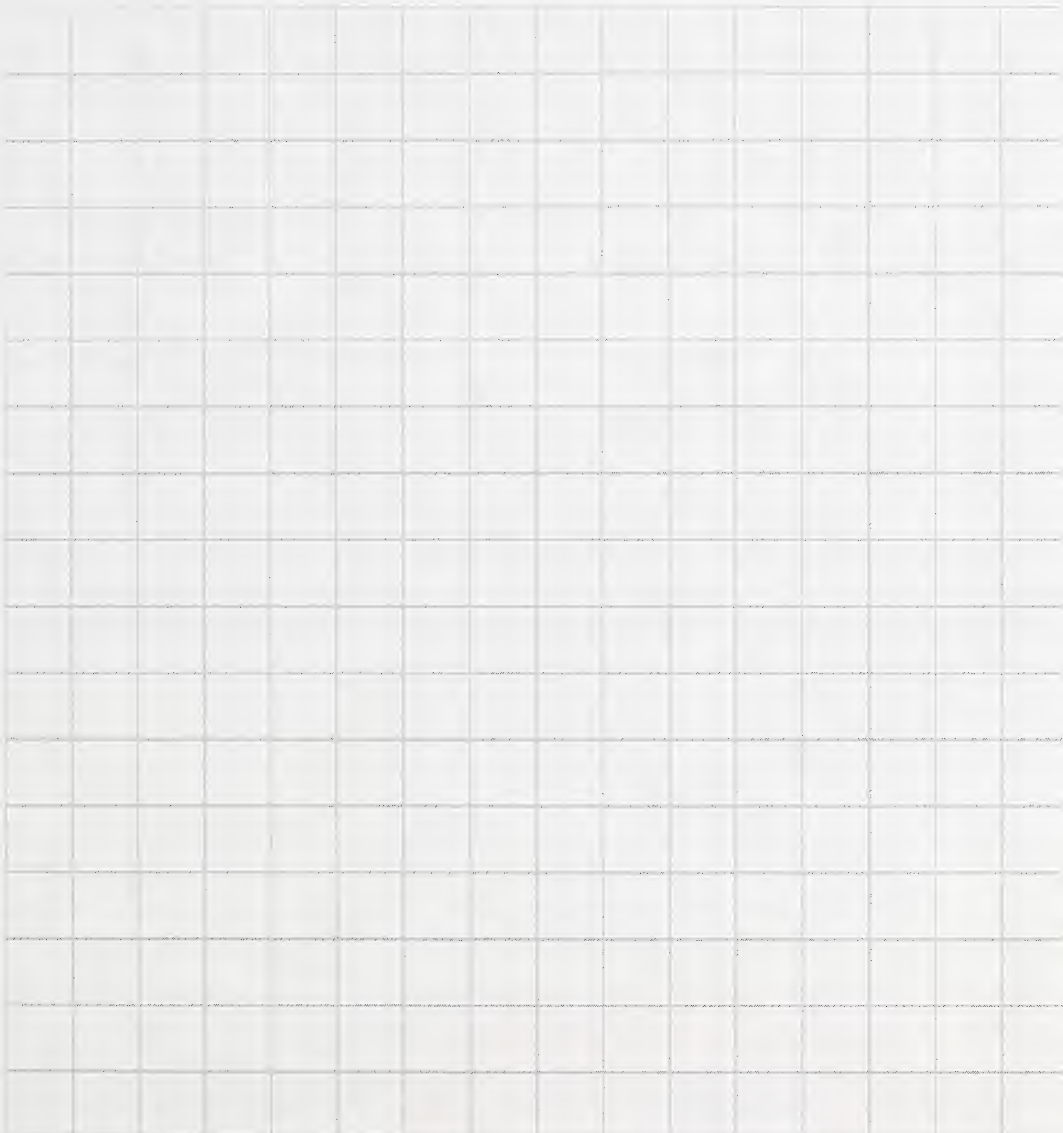
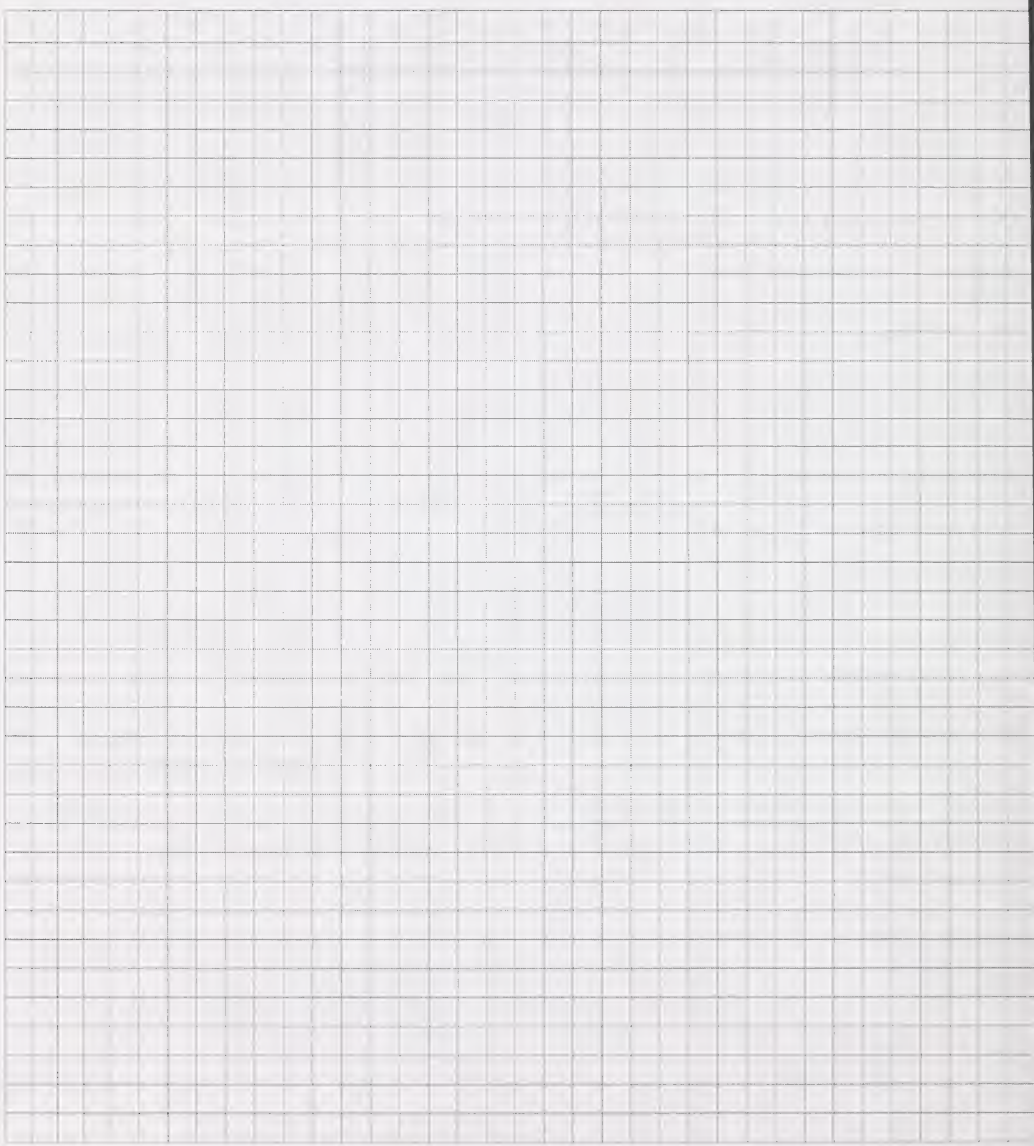
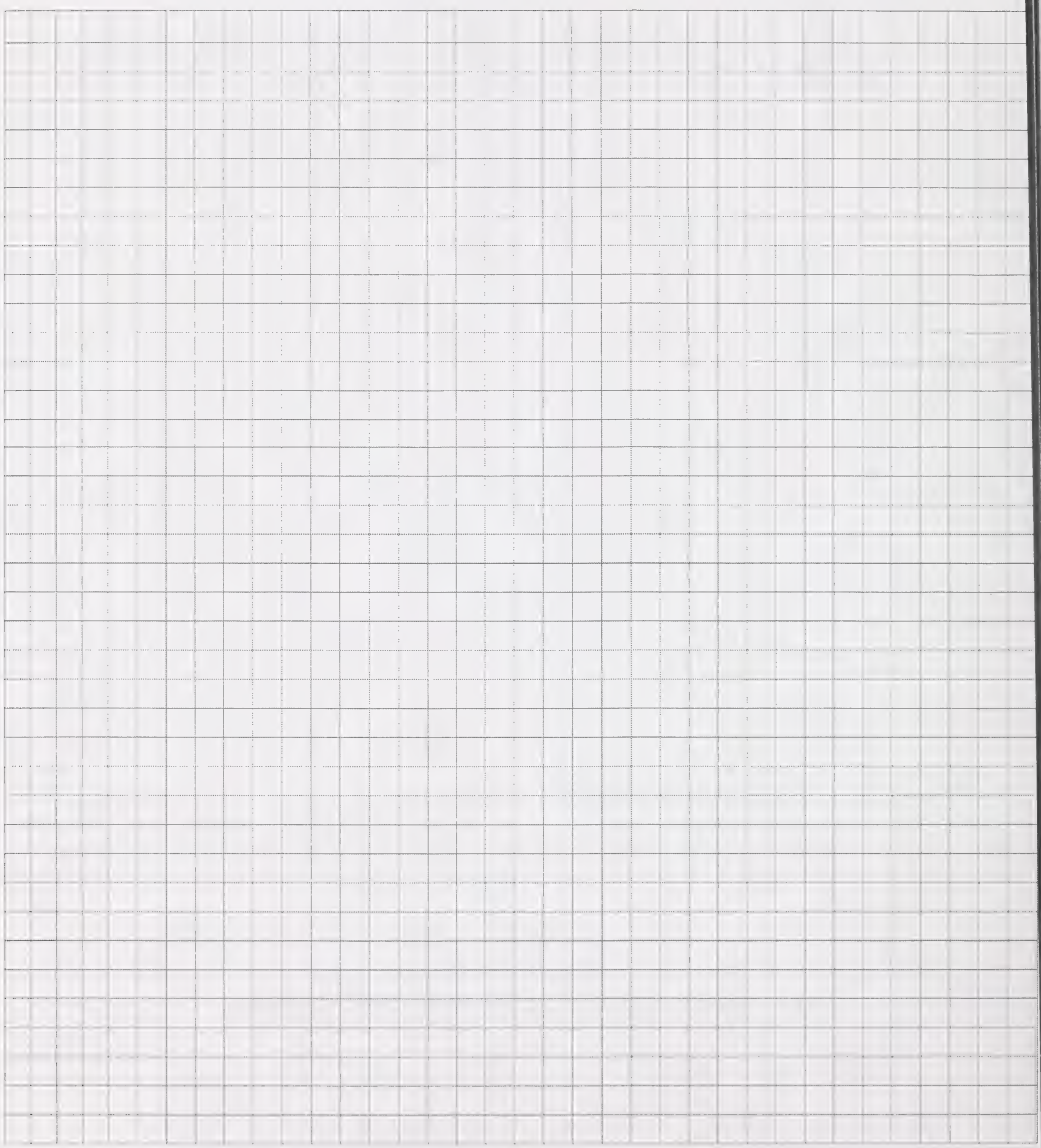
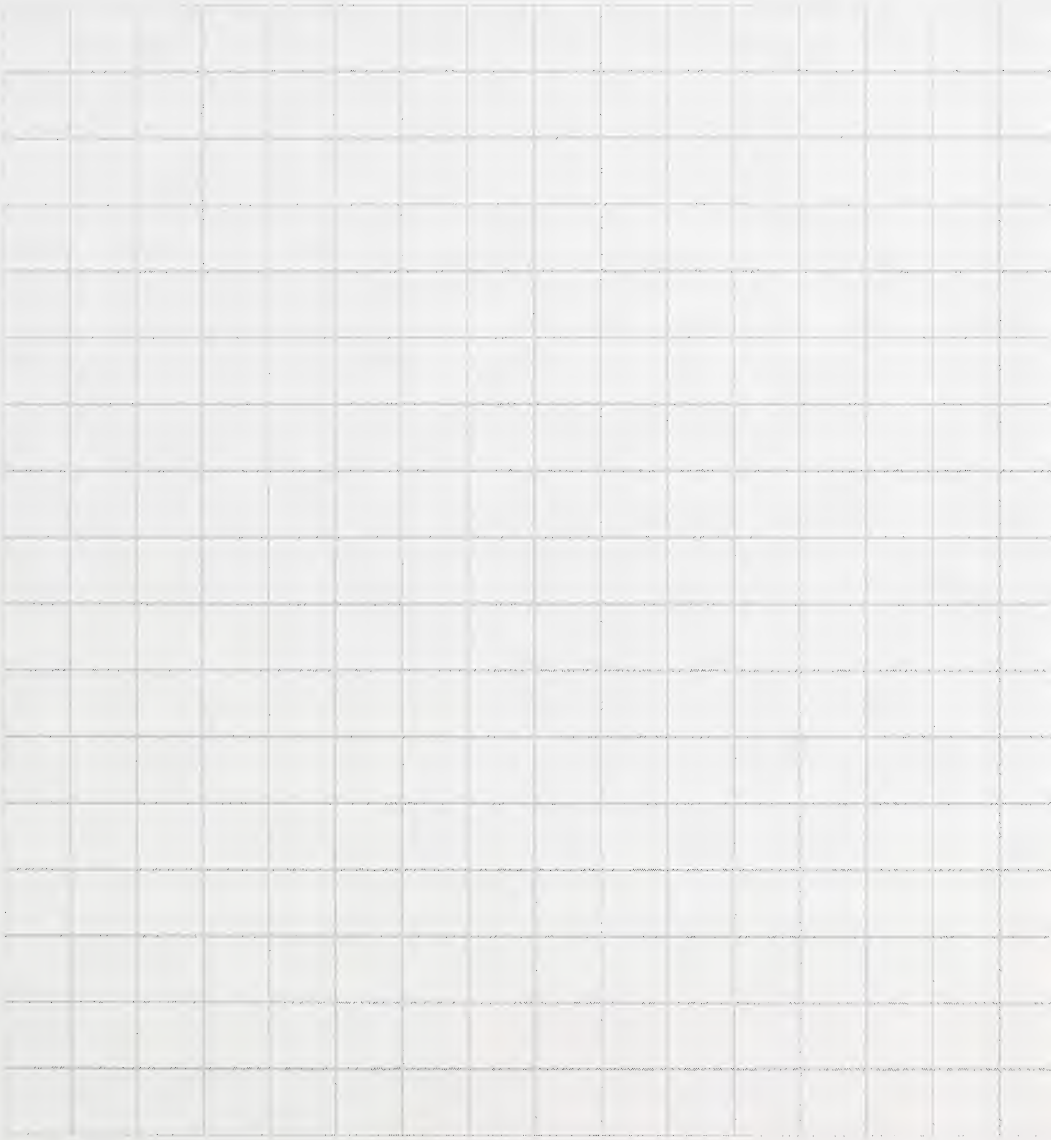


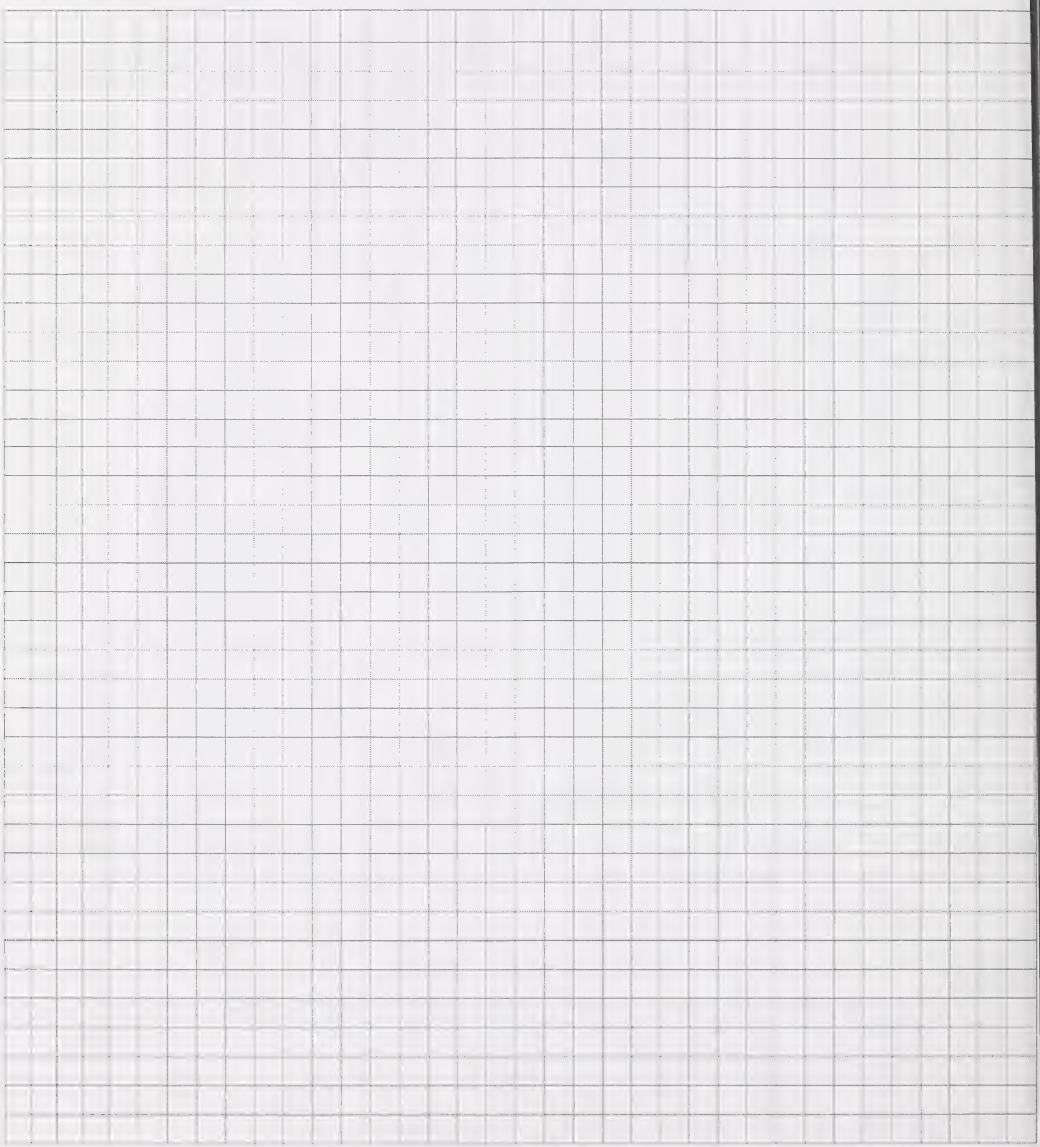


Centimetre Grid Paper

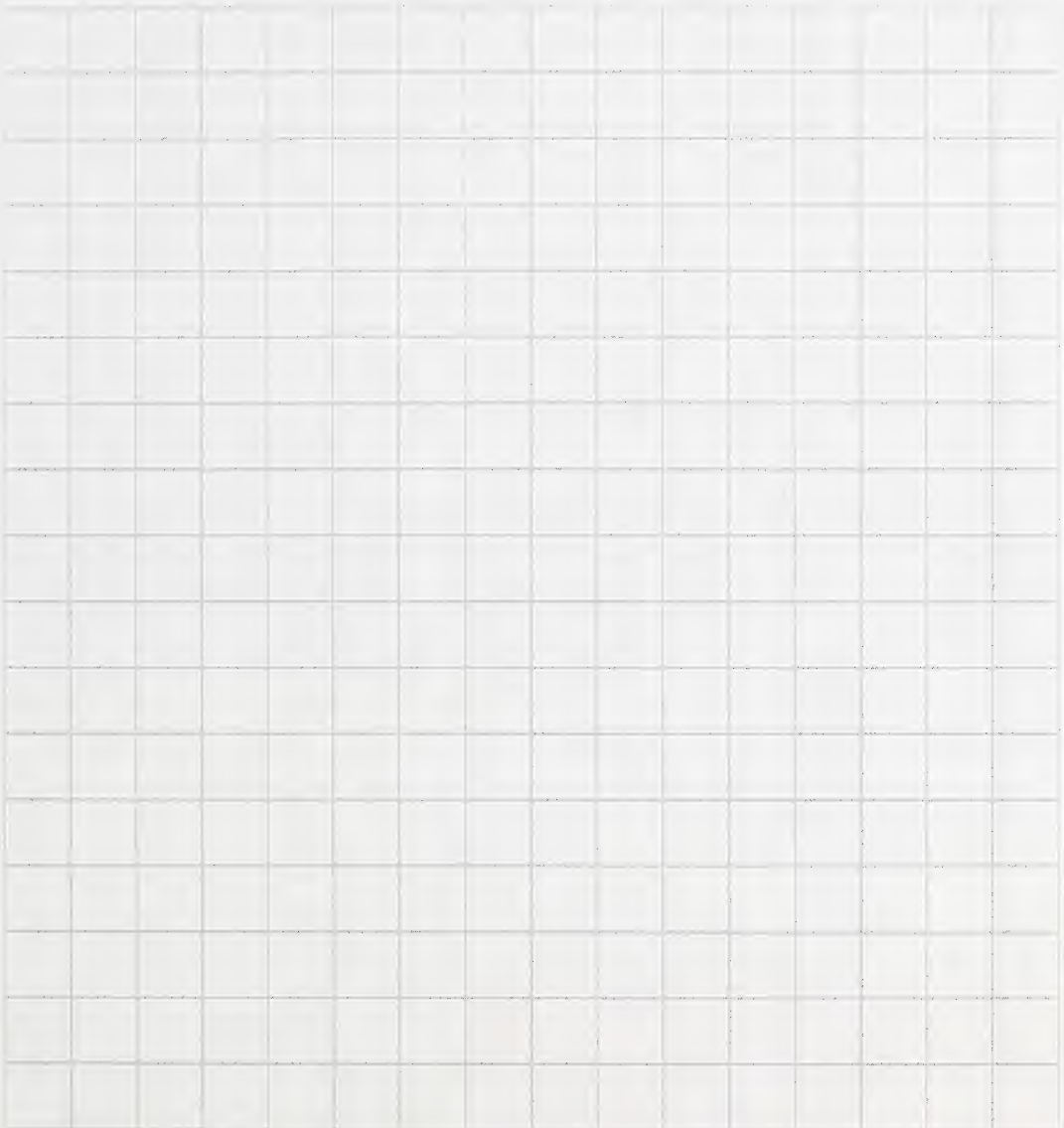


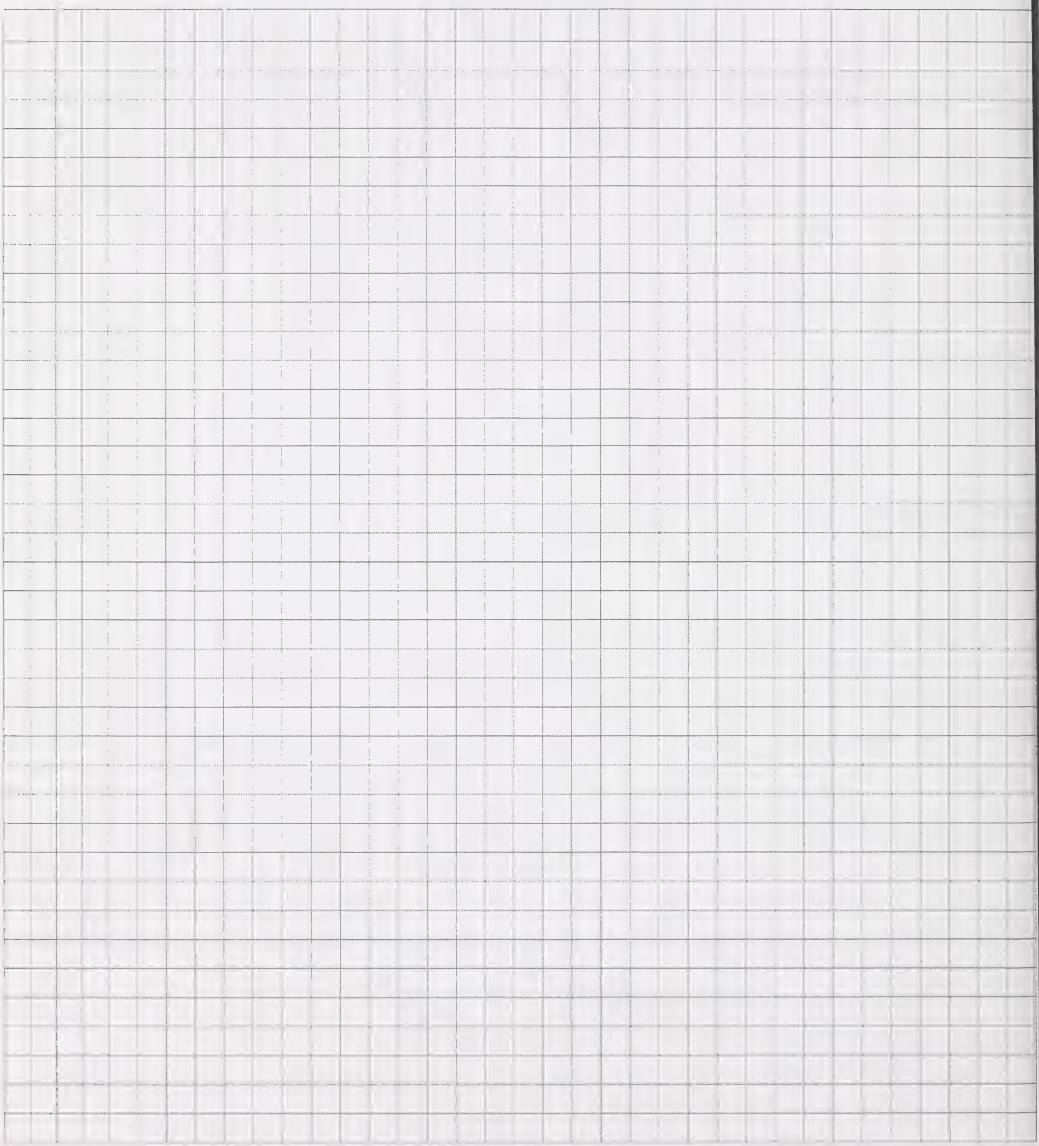
Centimetre Grid Paper



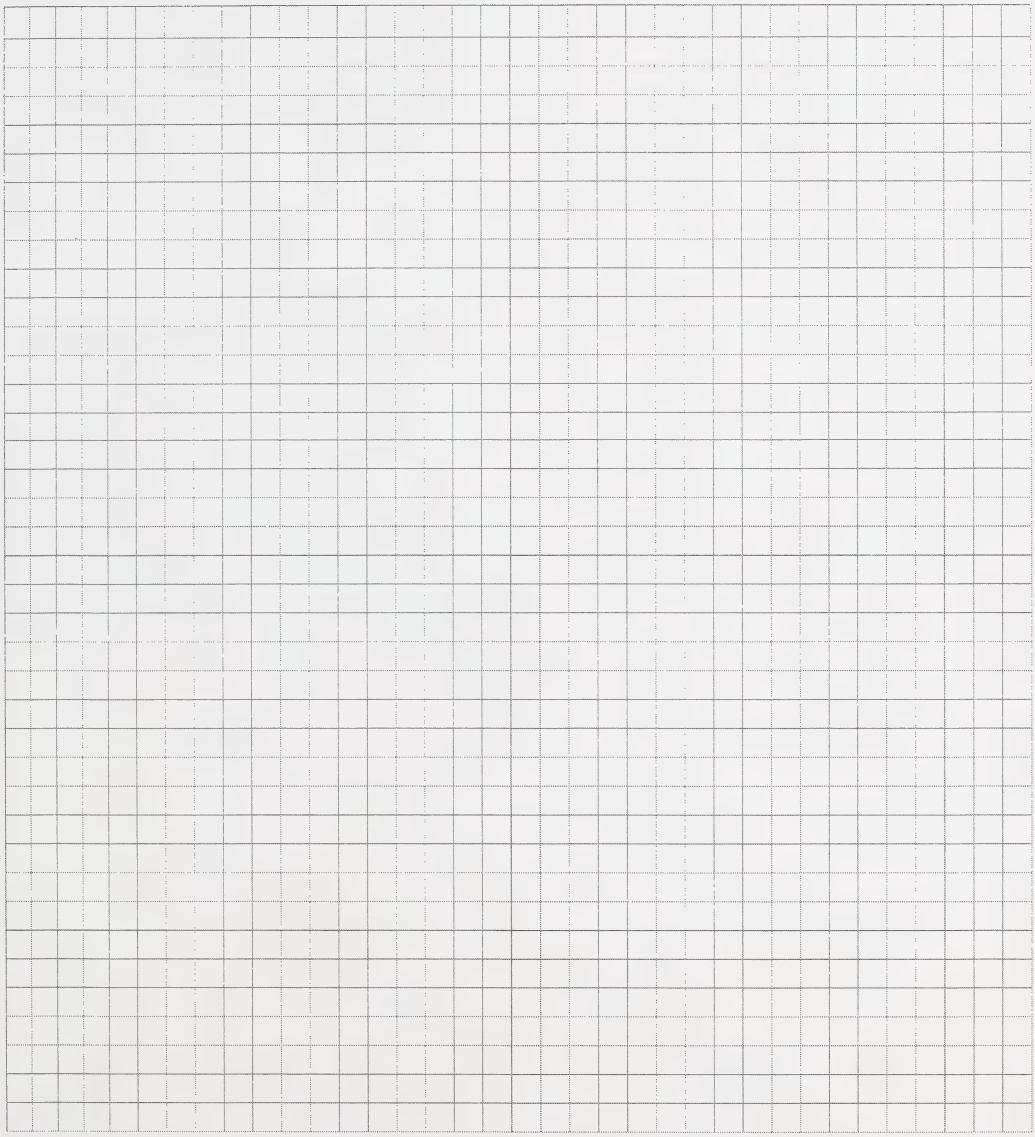


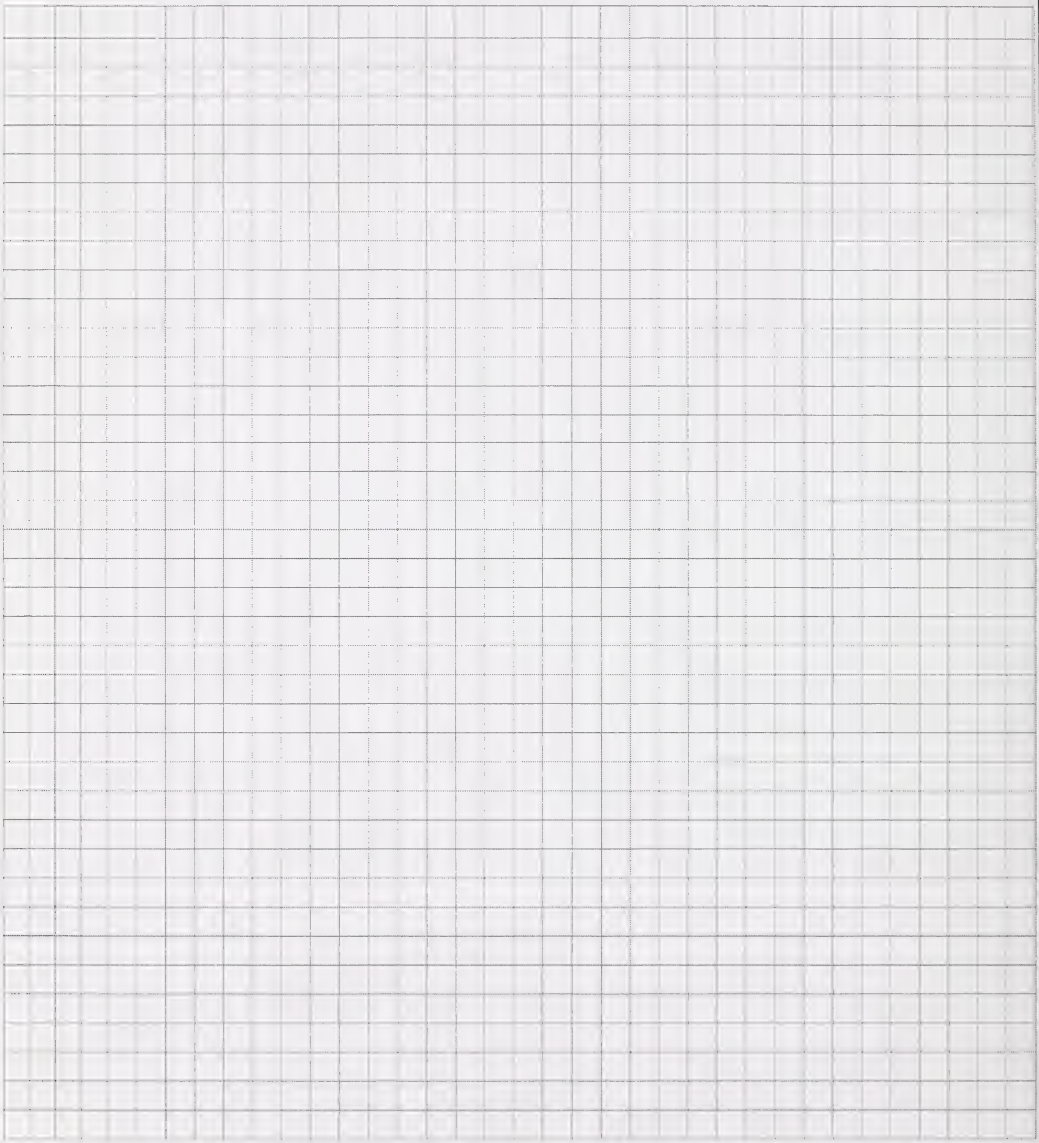
Centimetre Grid Paper





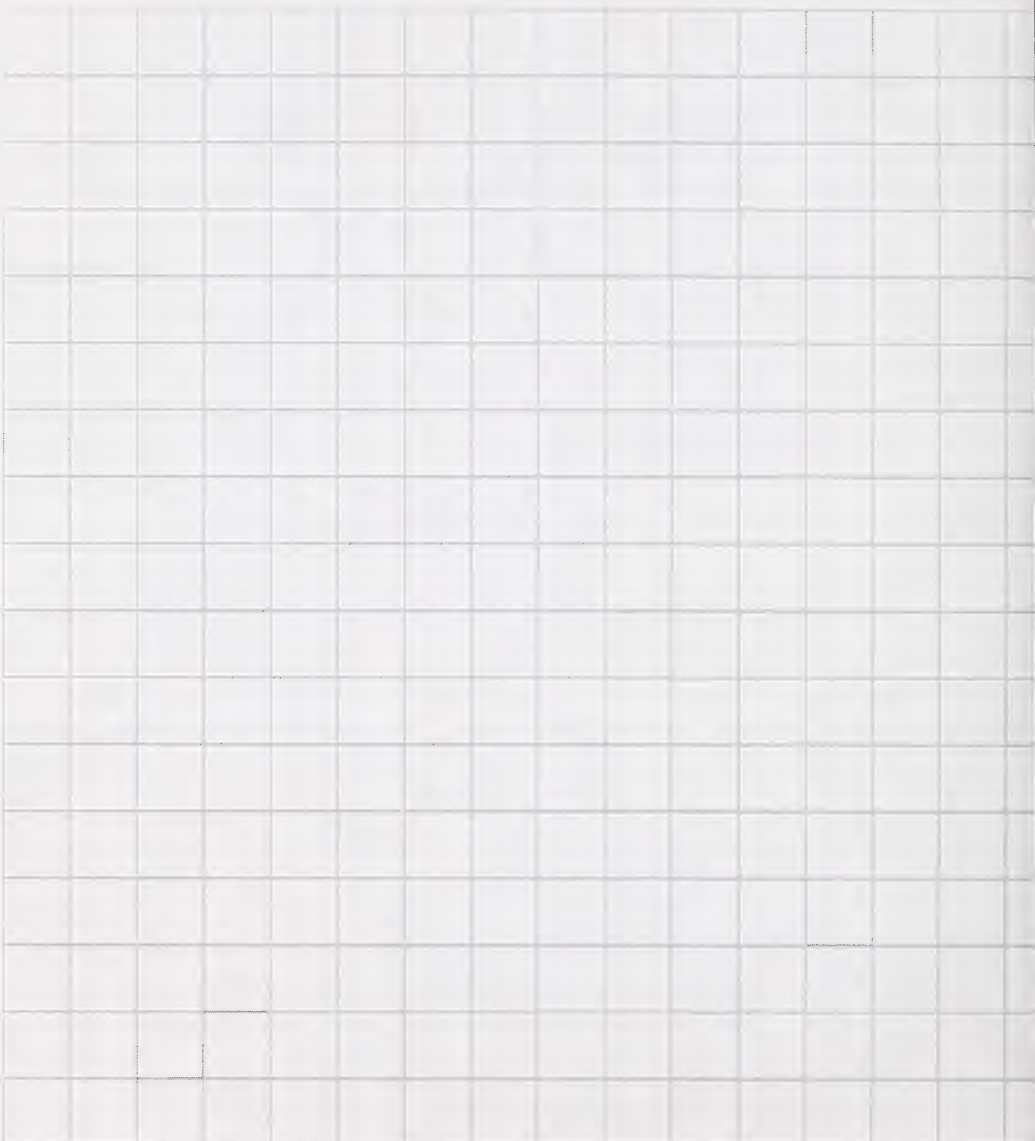
Grid Paper



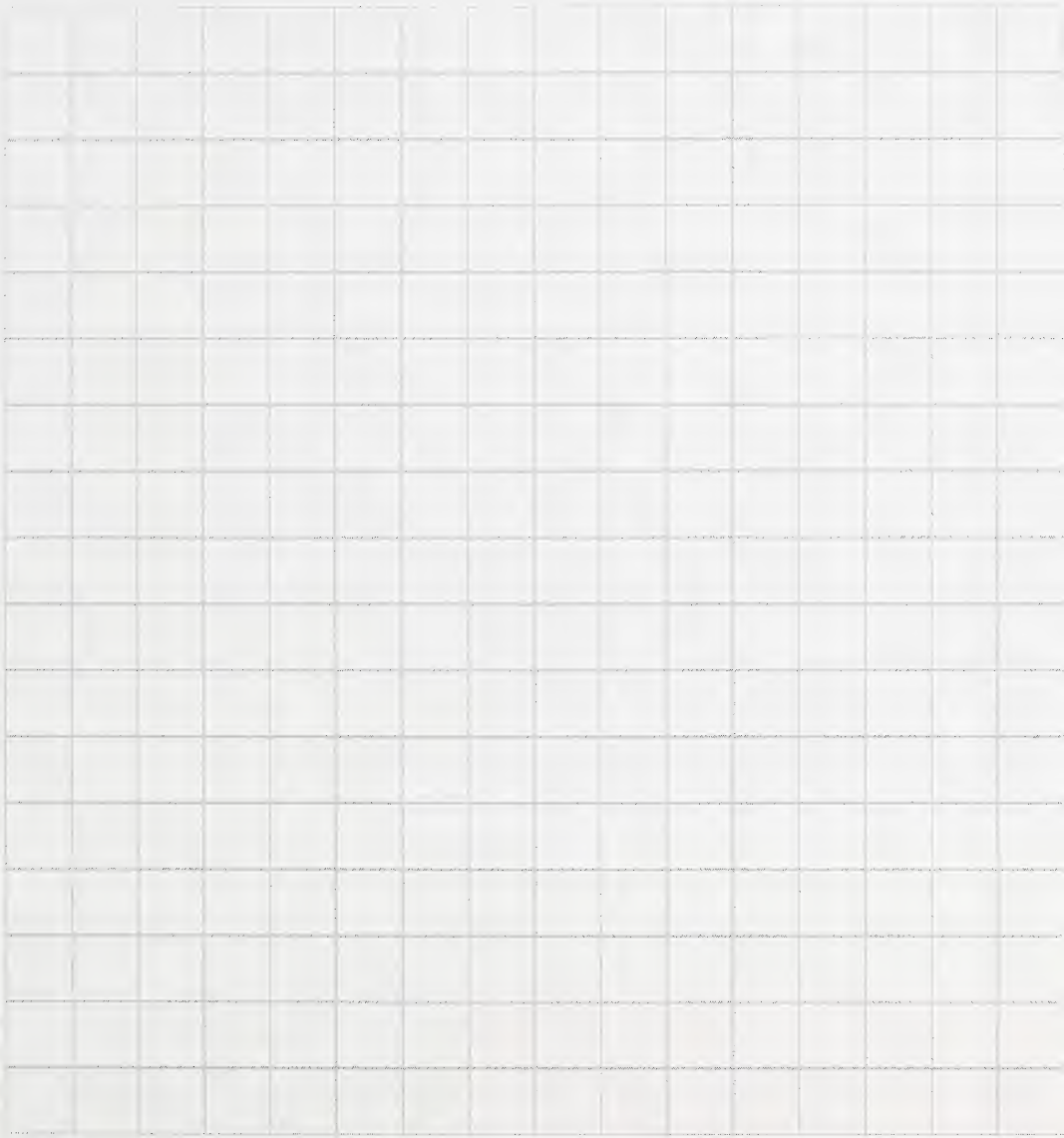


Centimetre Grid Paper

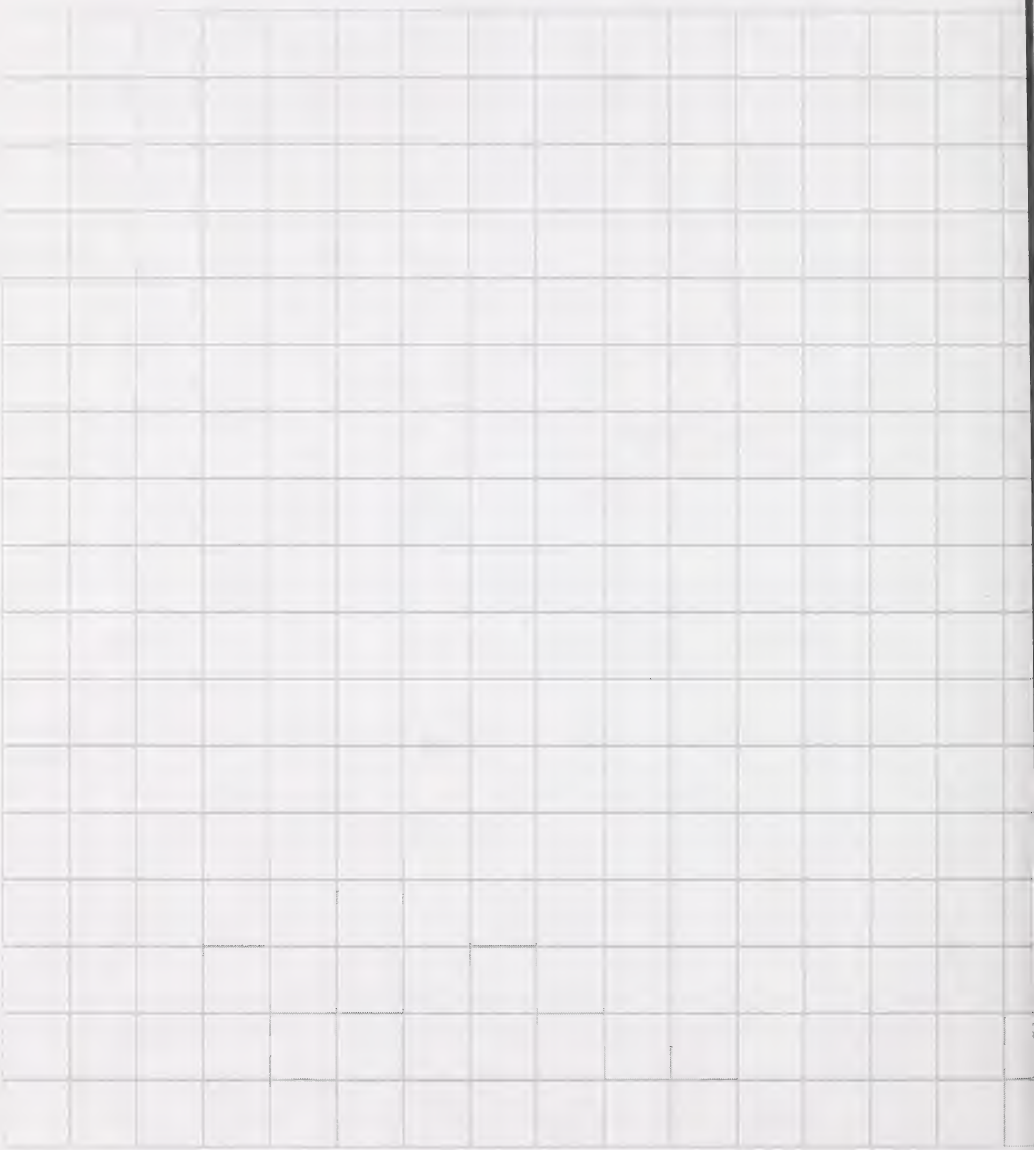
Centimetre Grid Paper



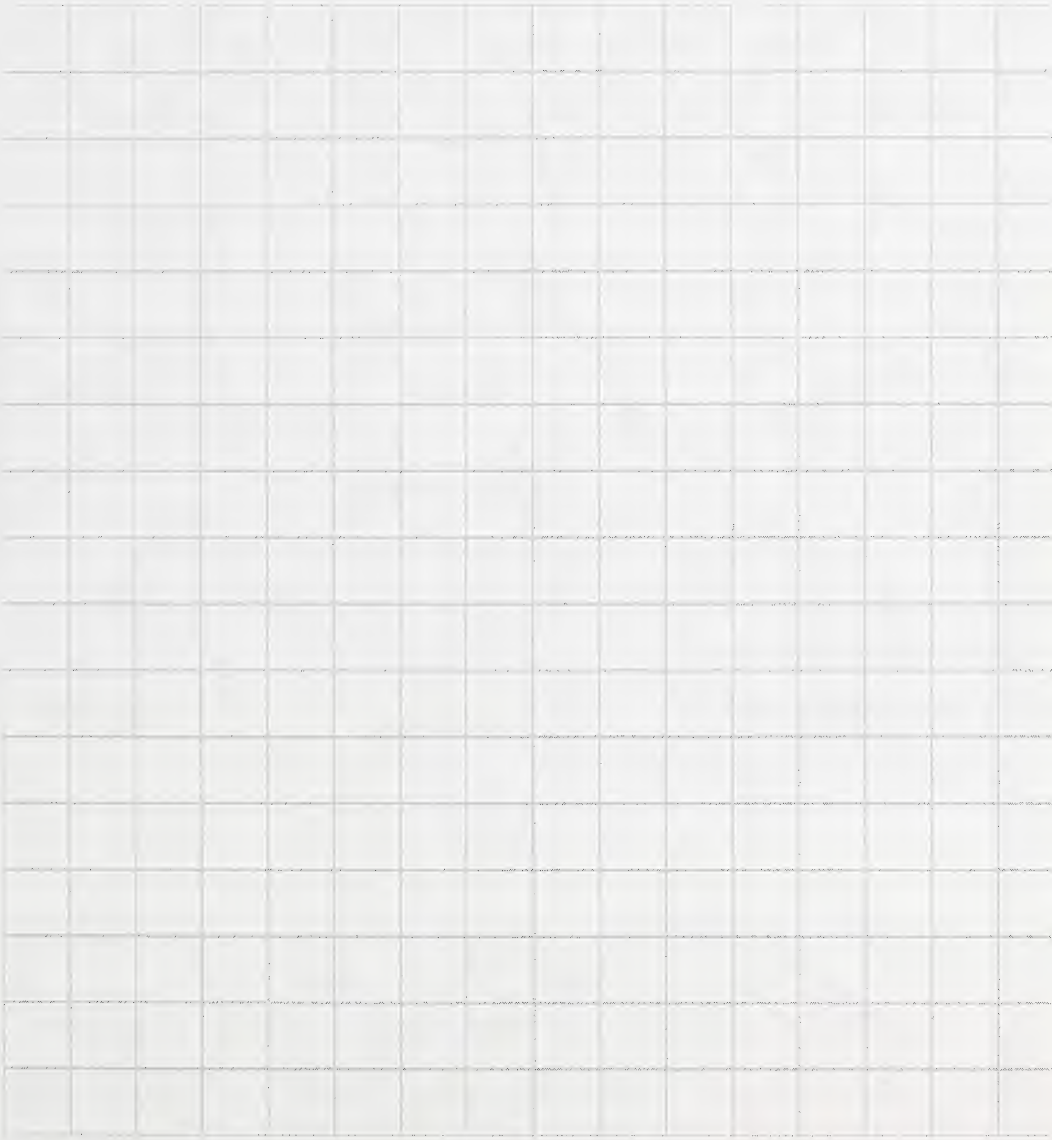
Centimetre Grid Paper



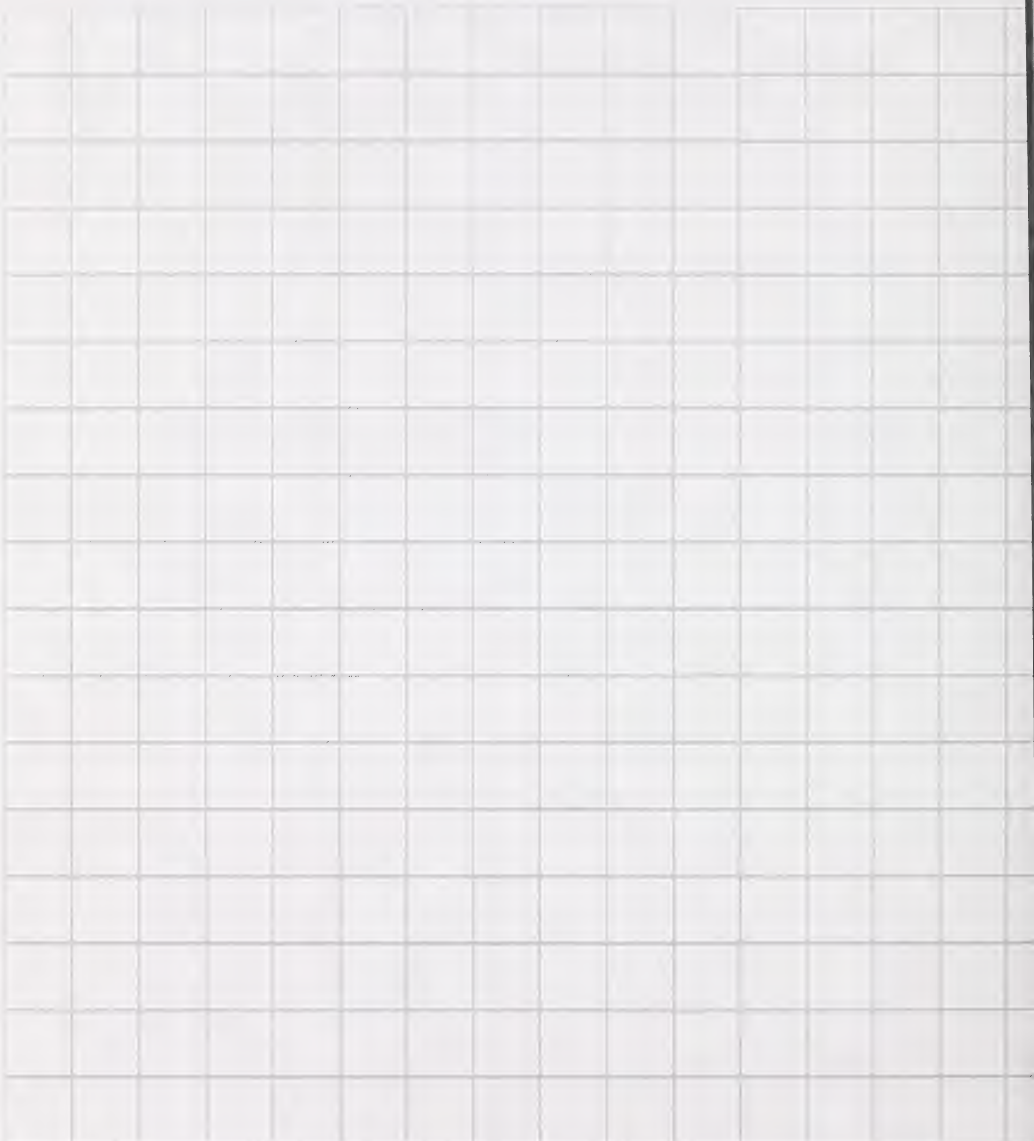
Centimetre Grid Paper



Centimetre Grid Paper



Centimetre Grid Paper



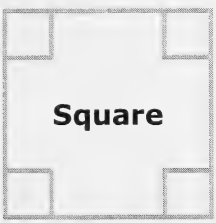
Polygons

Trapezoid

Parallelogram

Trapezoid 2

Triangle


Square

Rhombus

Octagon

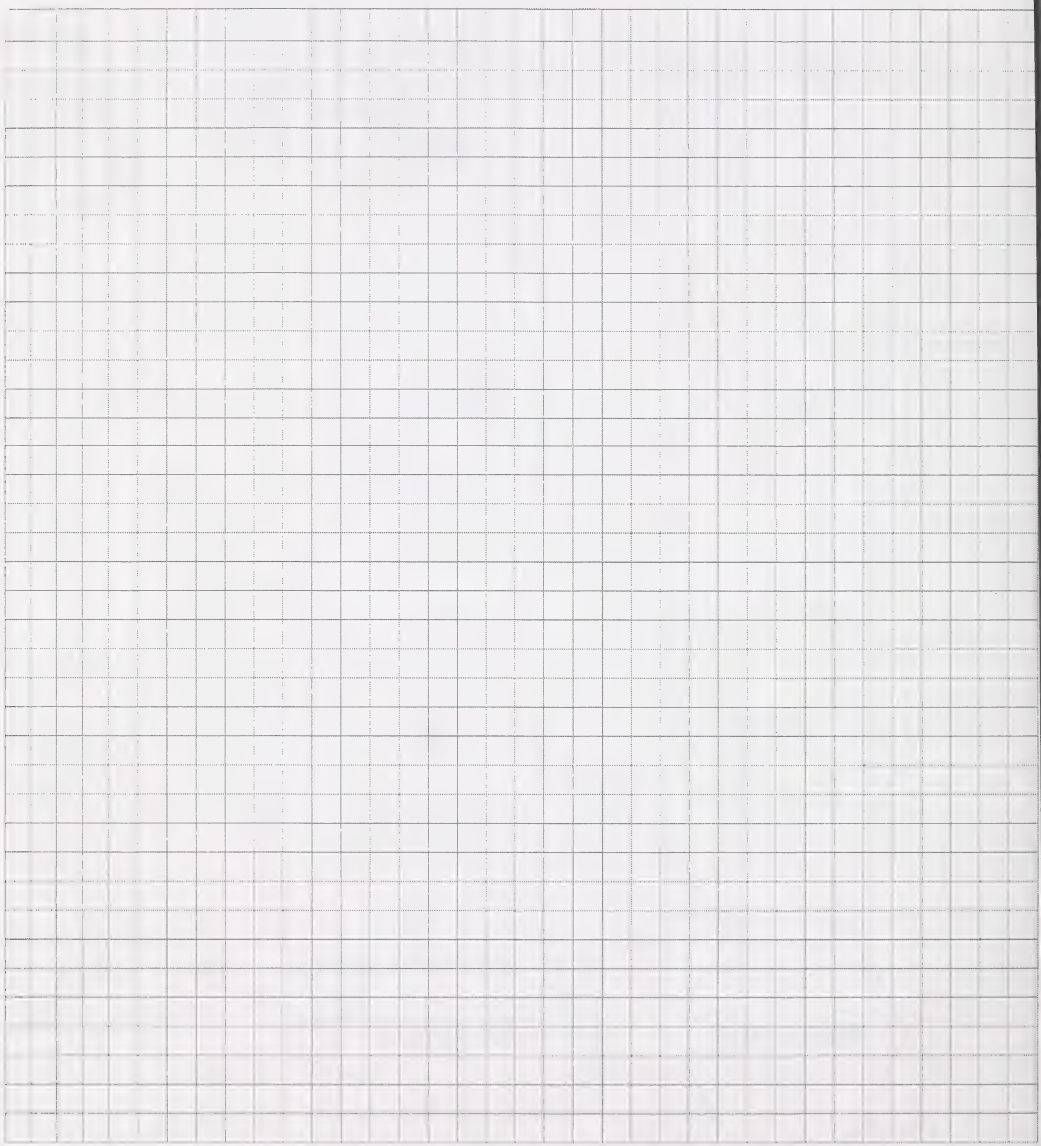
Pentagon

Parallelogram 2

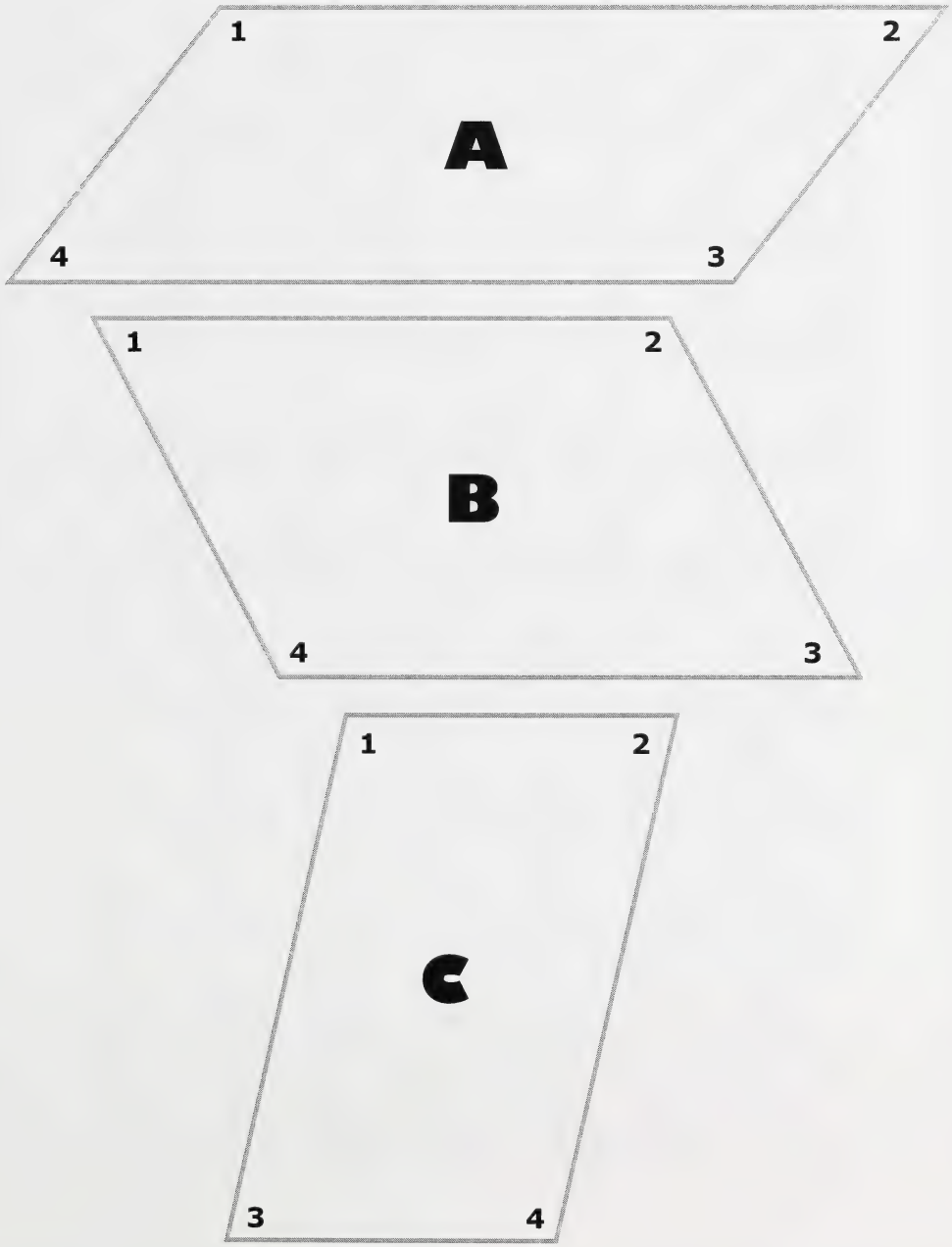
Hexagon

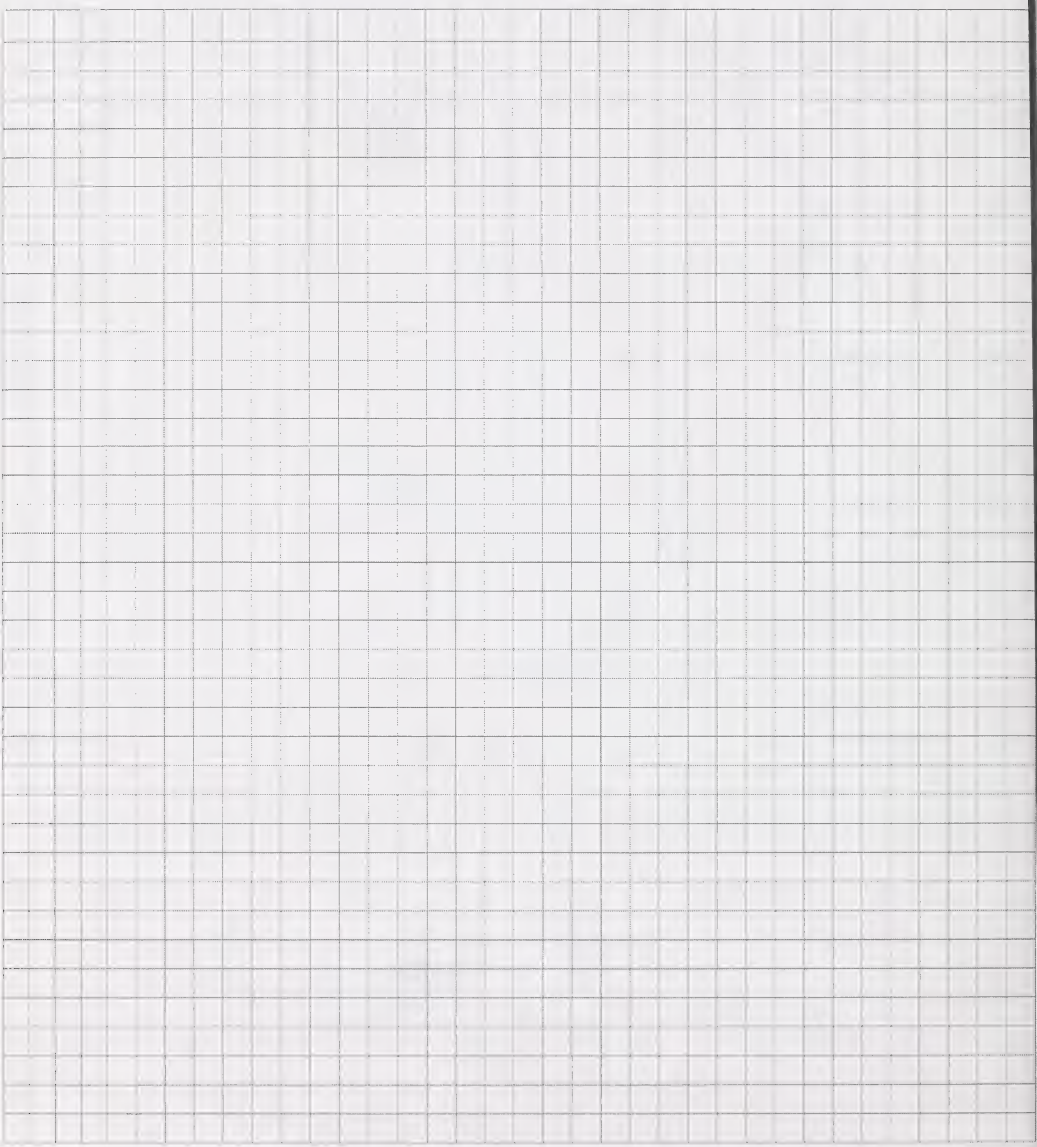
Rectangle

Triangle 2

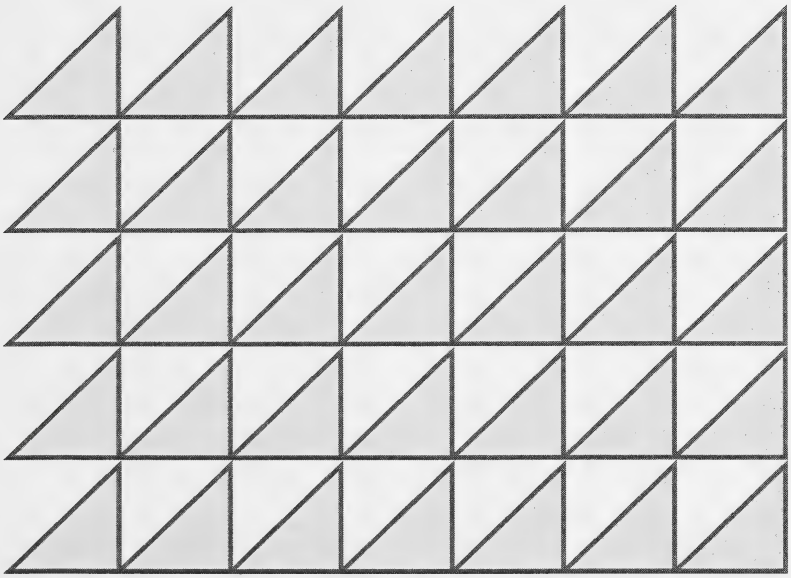


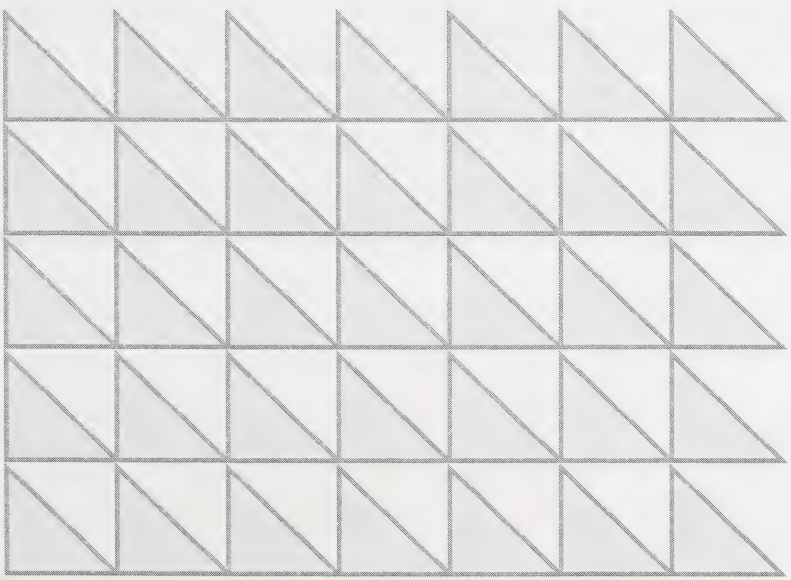
Parallelograms

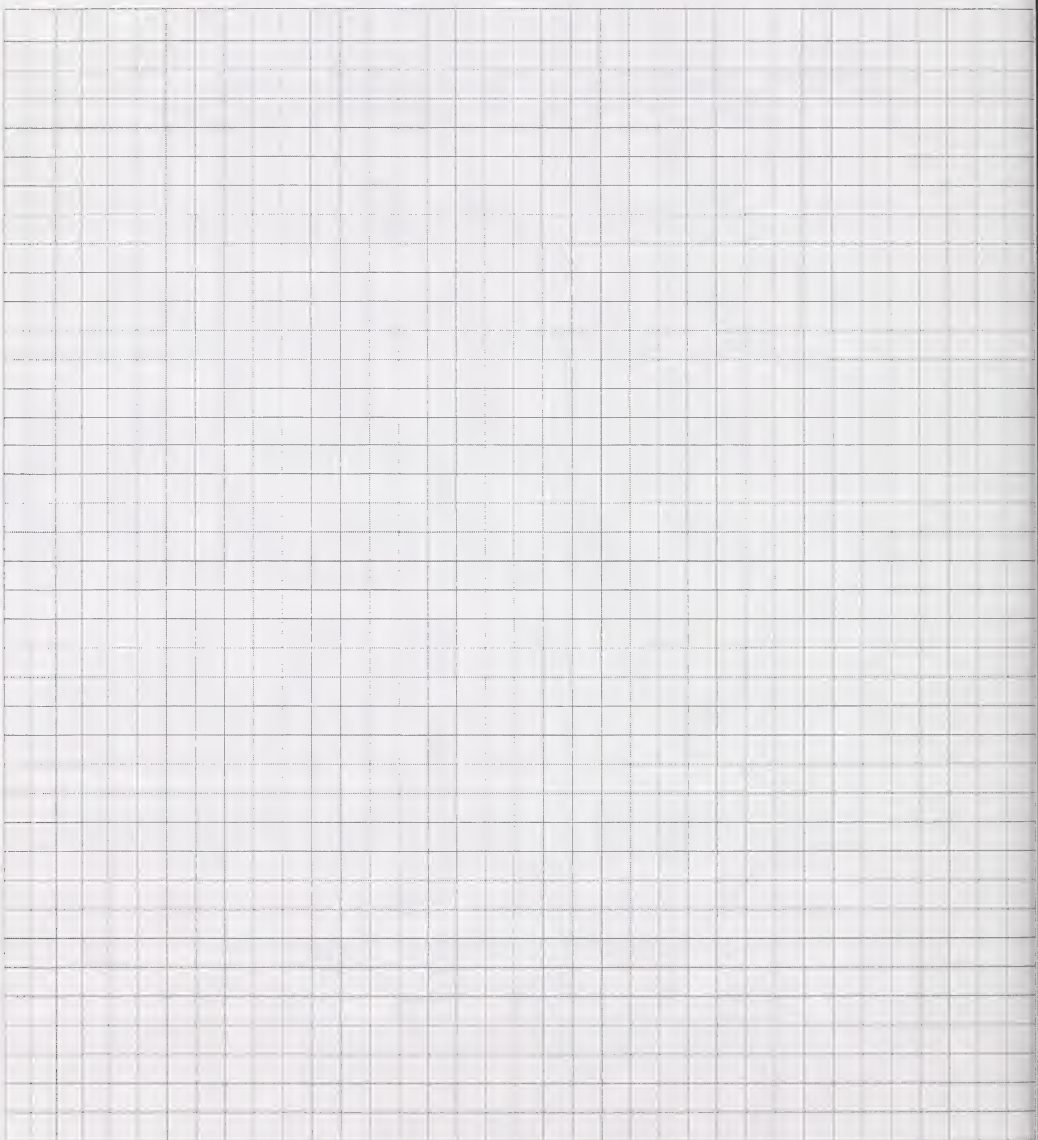




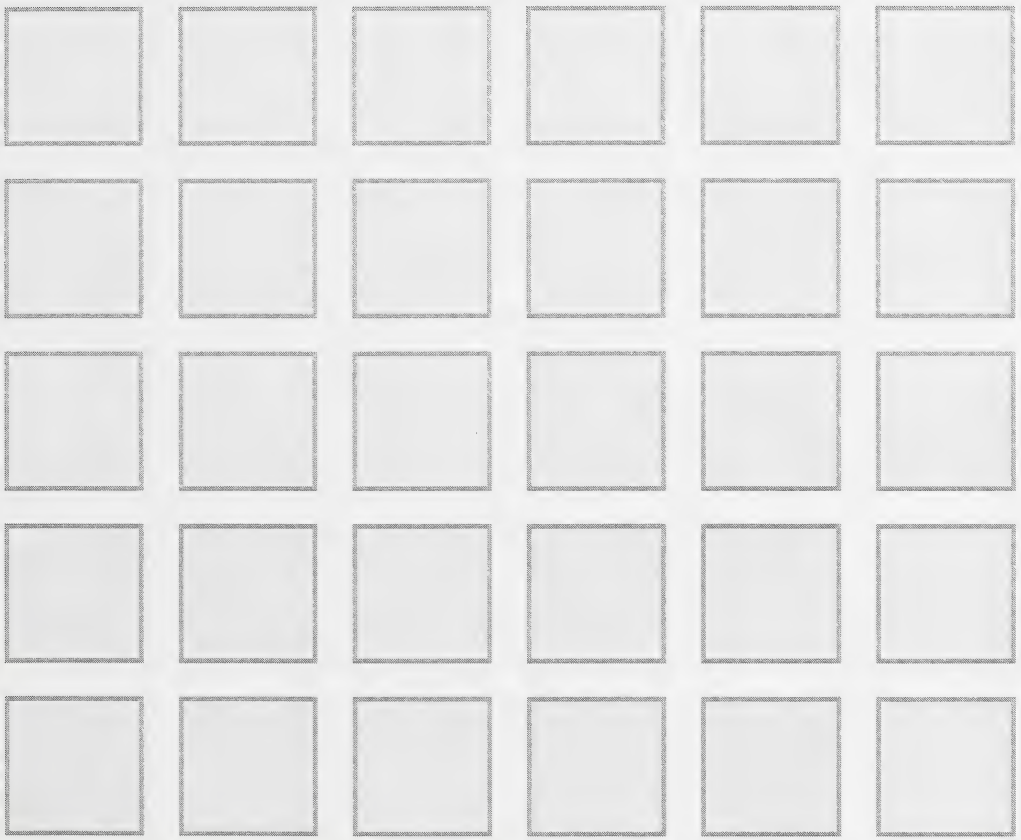
Shapes for Lesson 9, Exploration 2

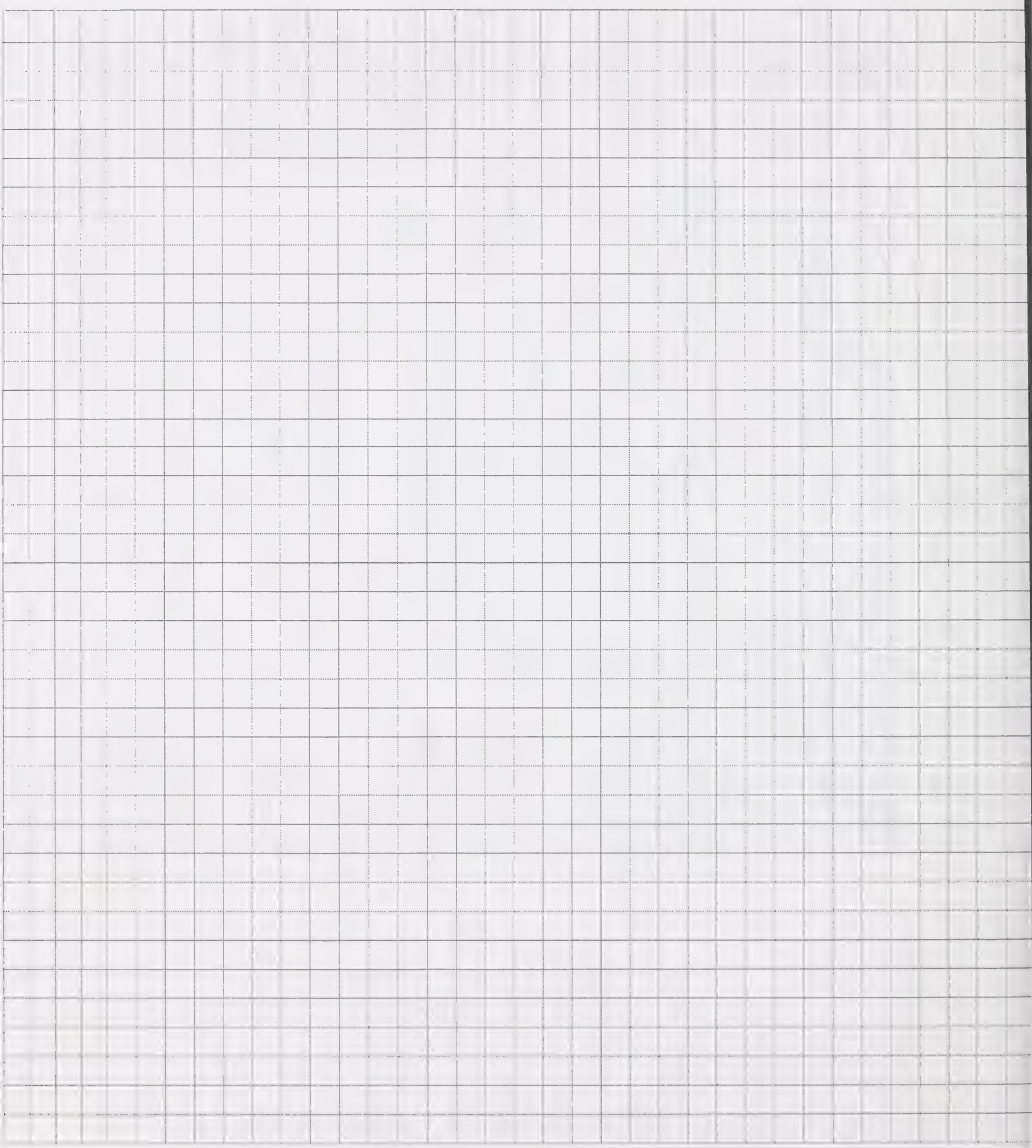






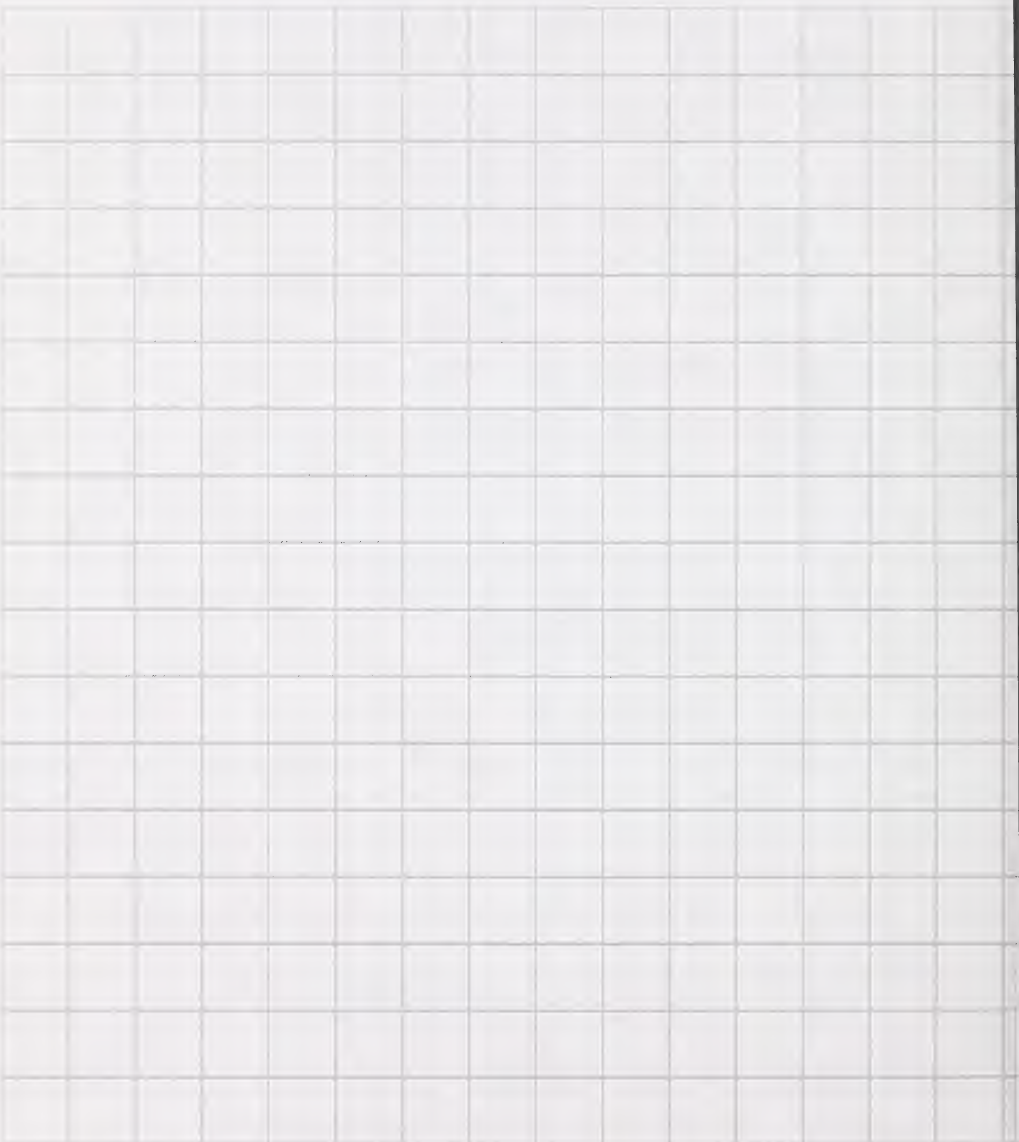
Shapes for Lesson 9, Exploration 2



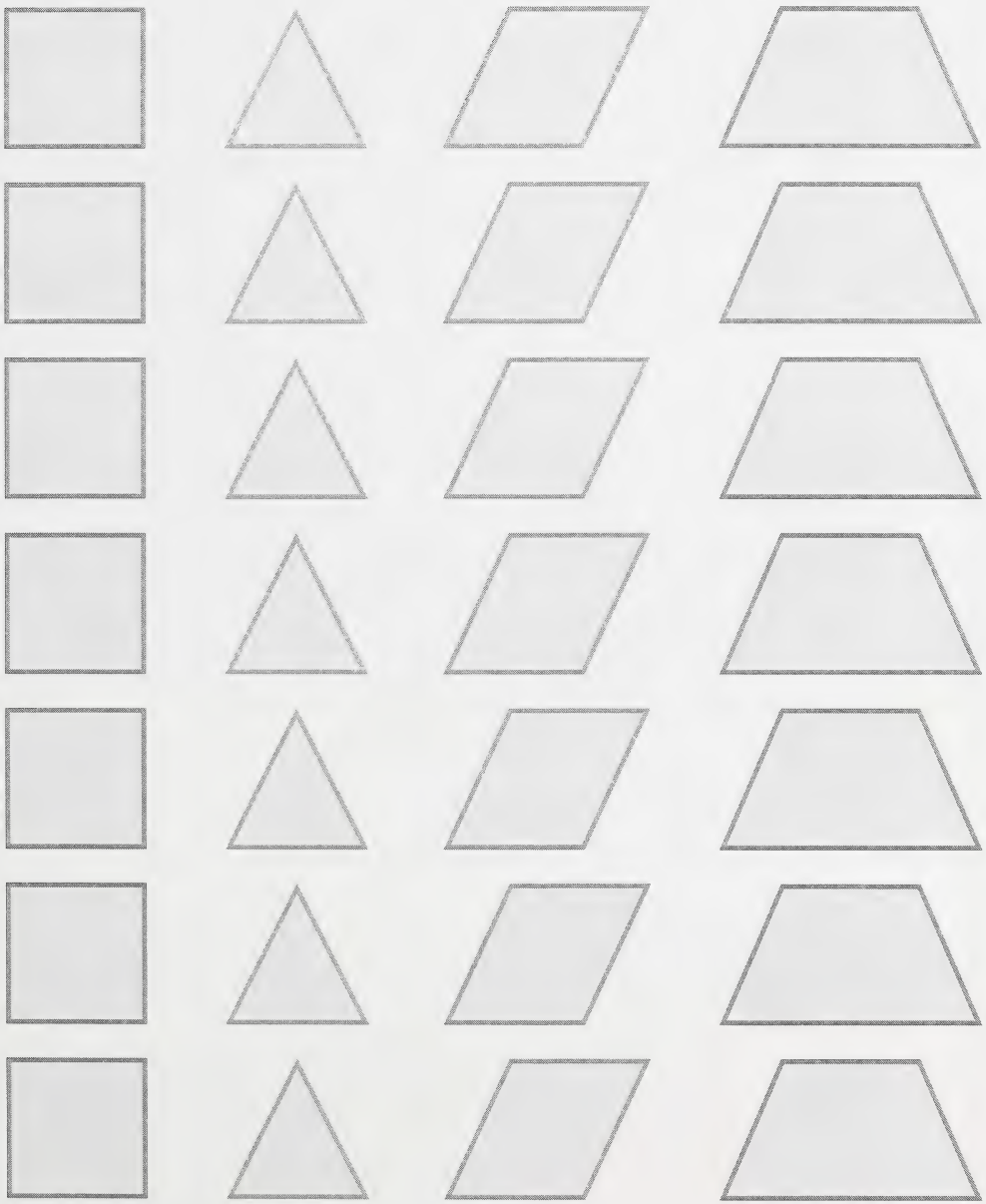


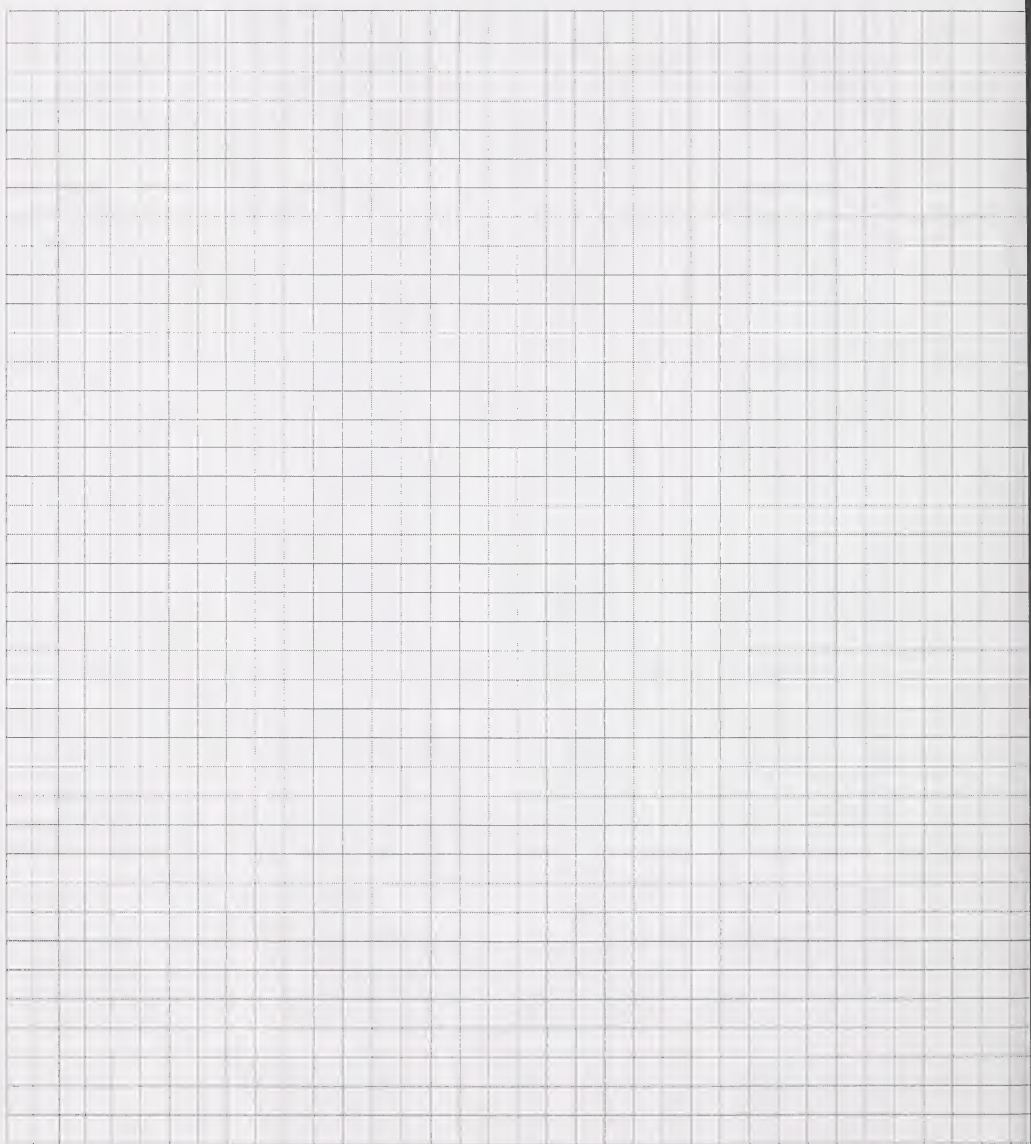
Centimetre Grid Paper

Centimetre Grid Paper

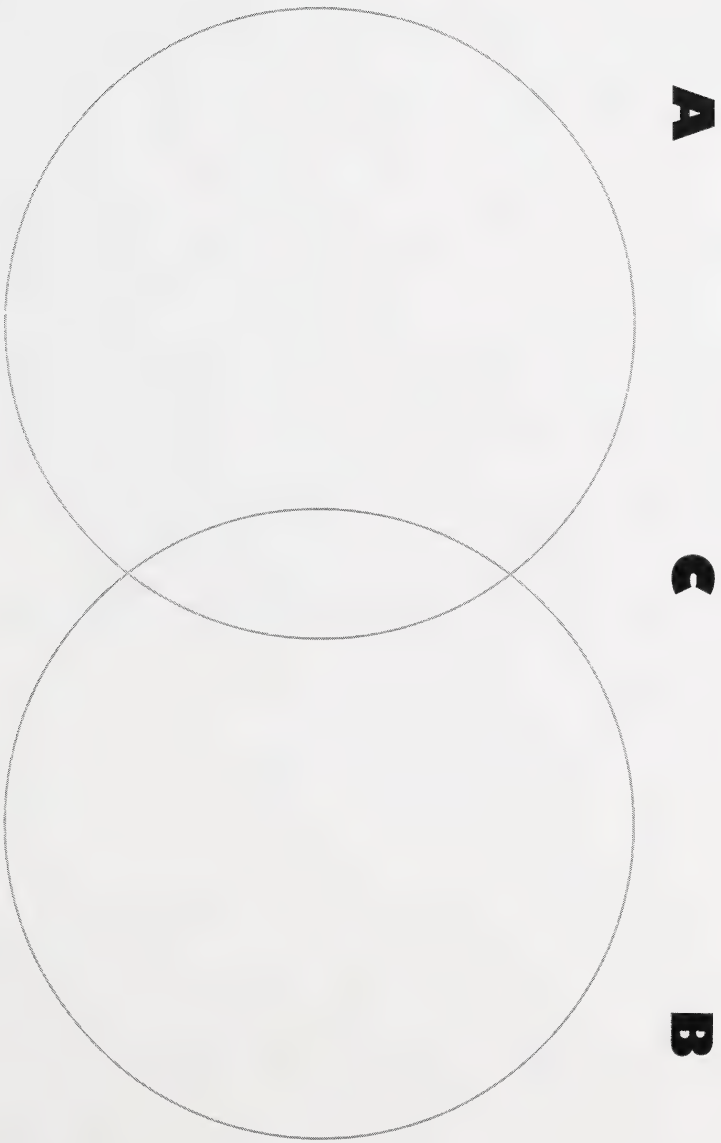


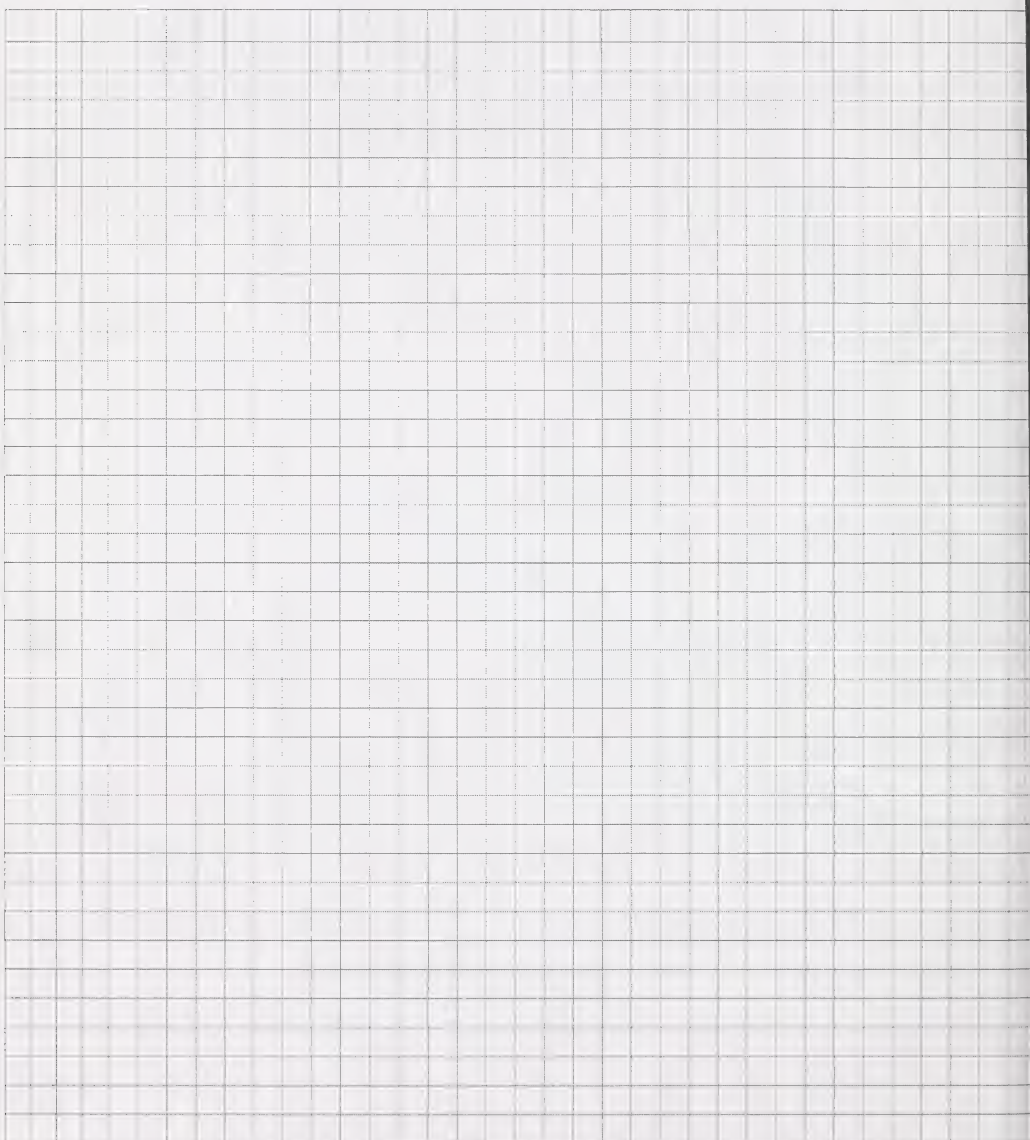
Pattern Blocks



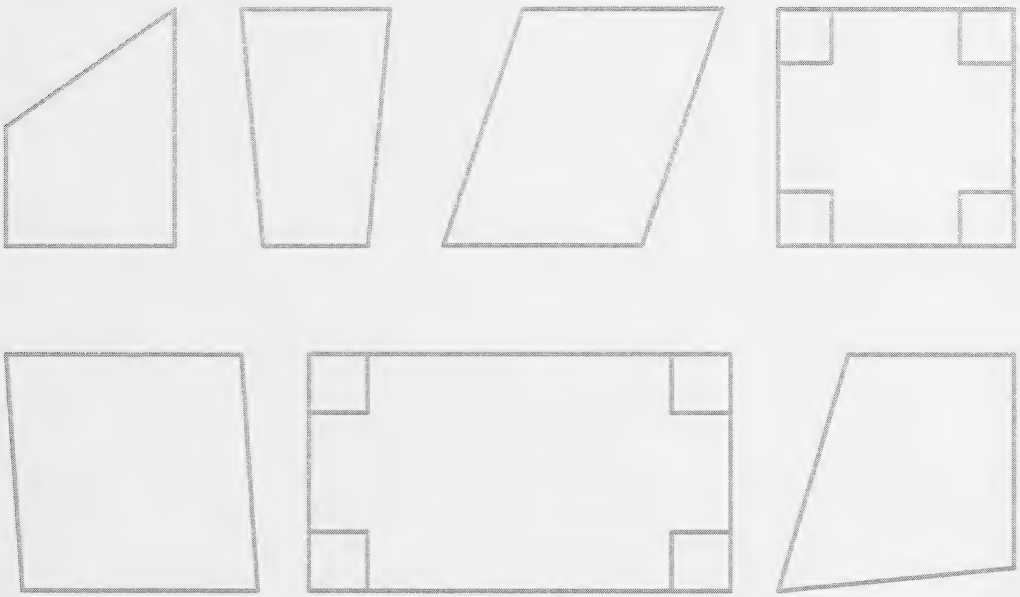


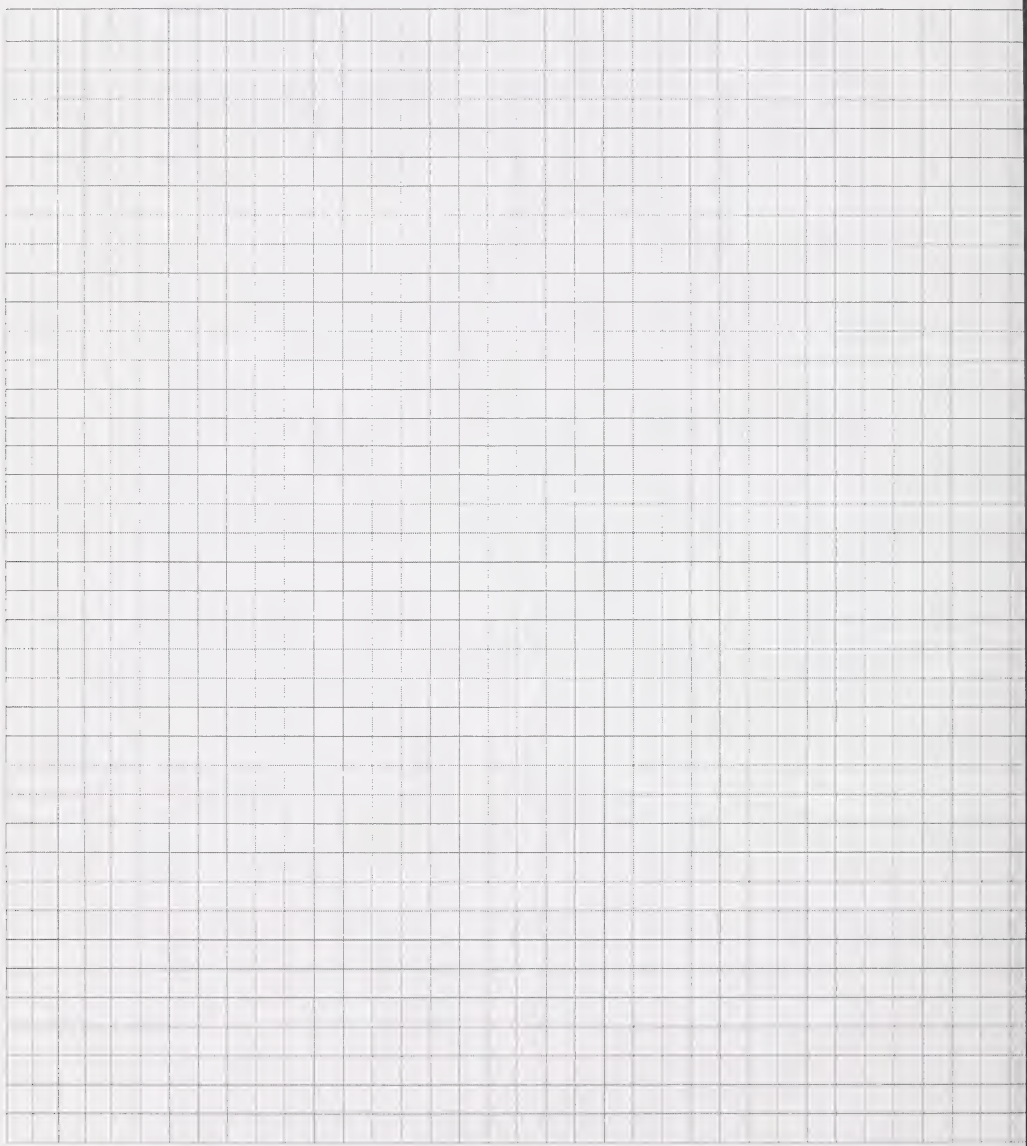
Venn Diagram Mat





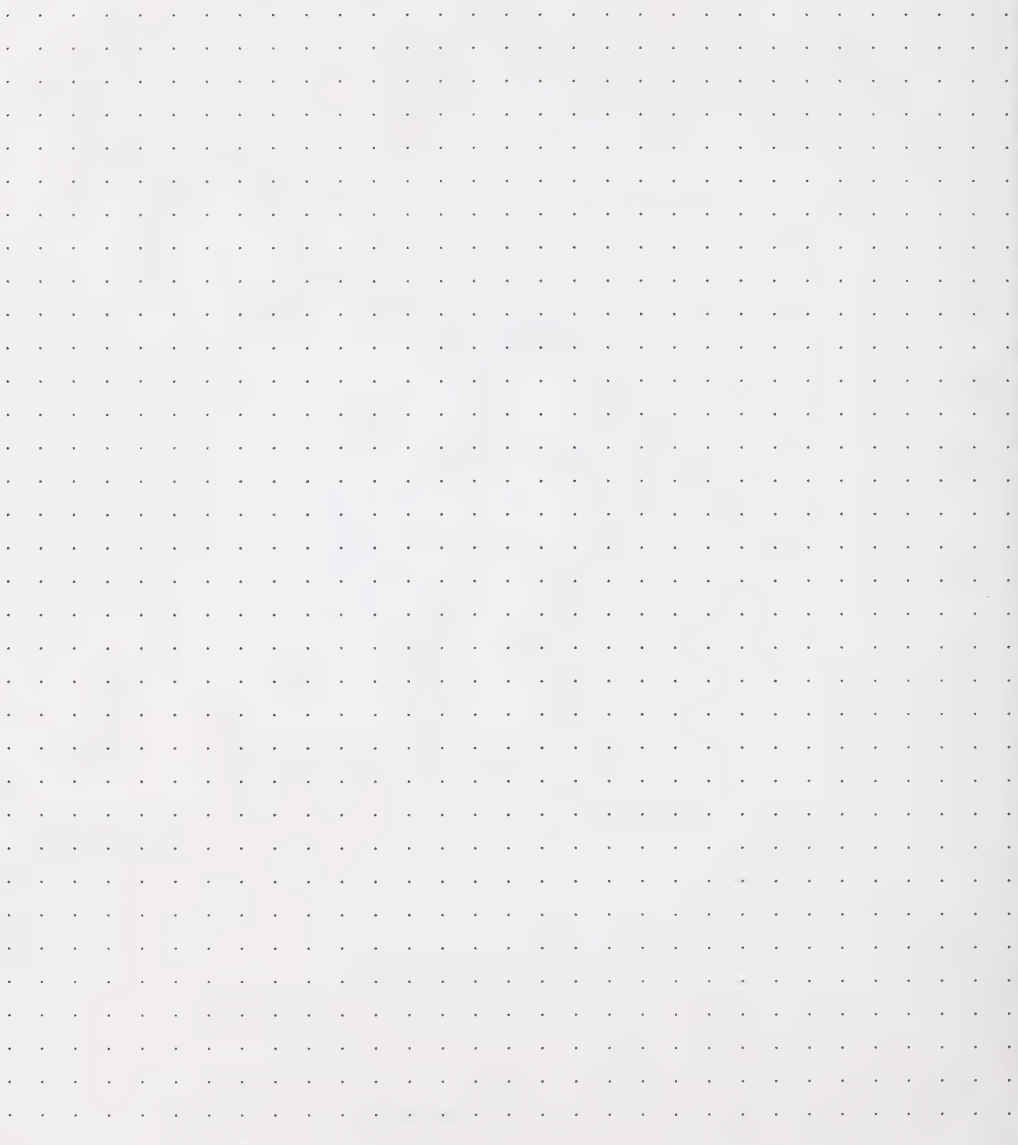
Quadrilateral Cut-Outs



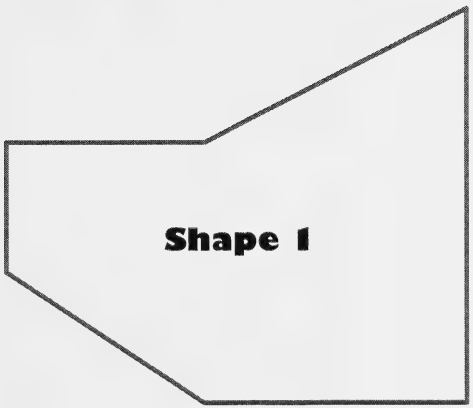


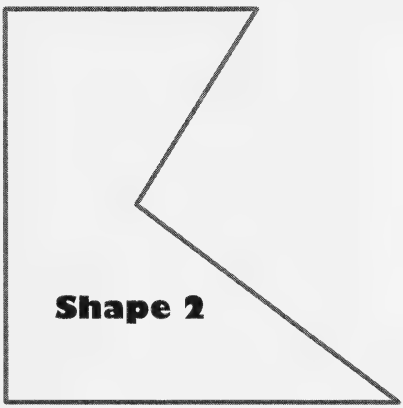
Dot Paper

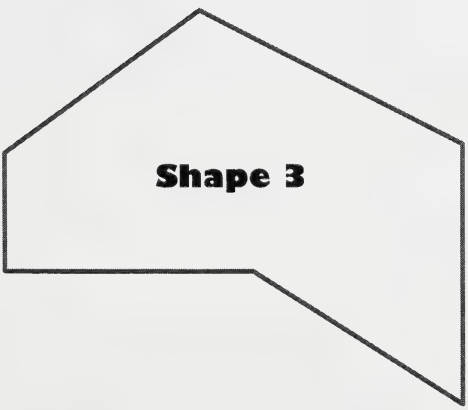
Dot Paper

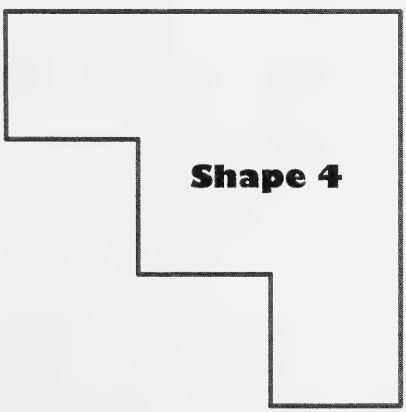


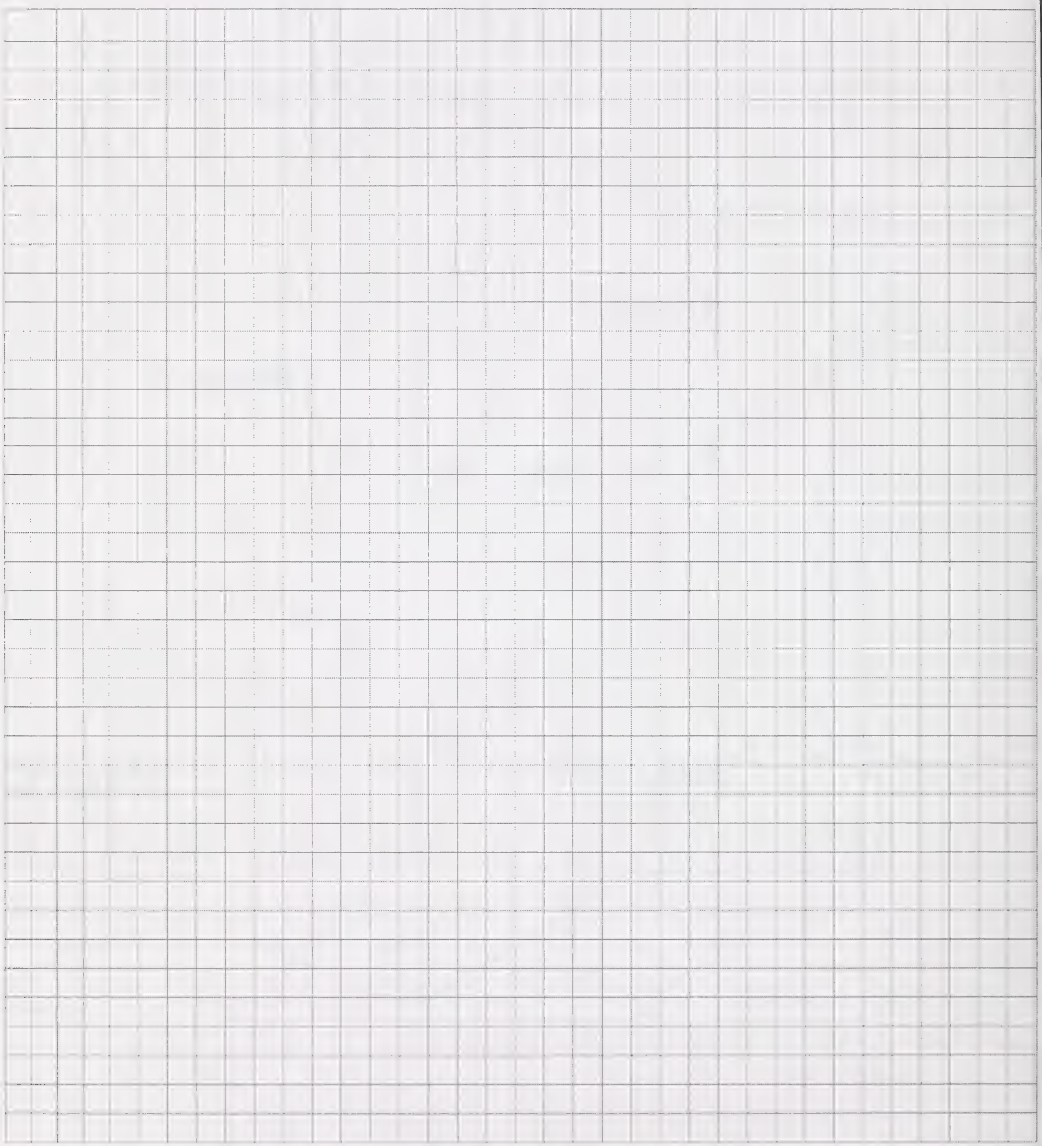
Shapes for Lesson 13, Exploration 1



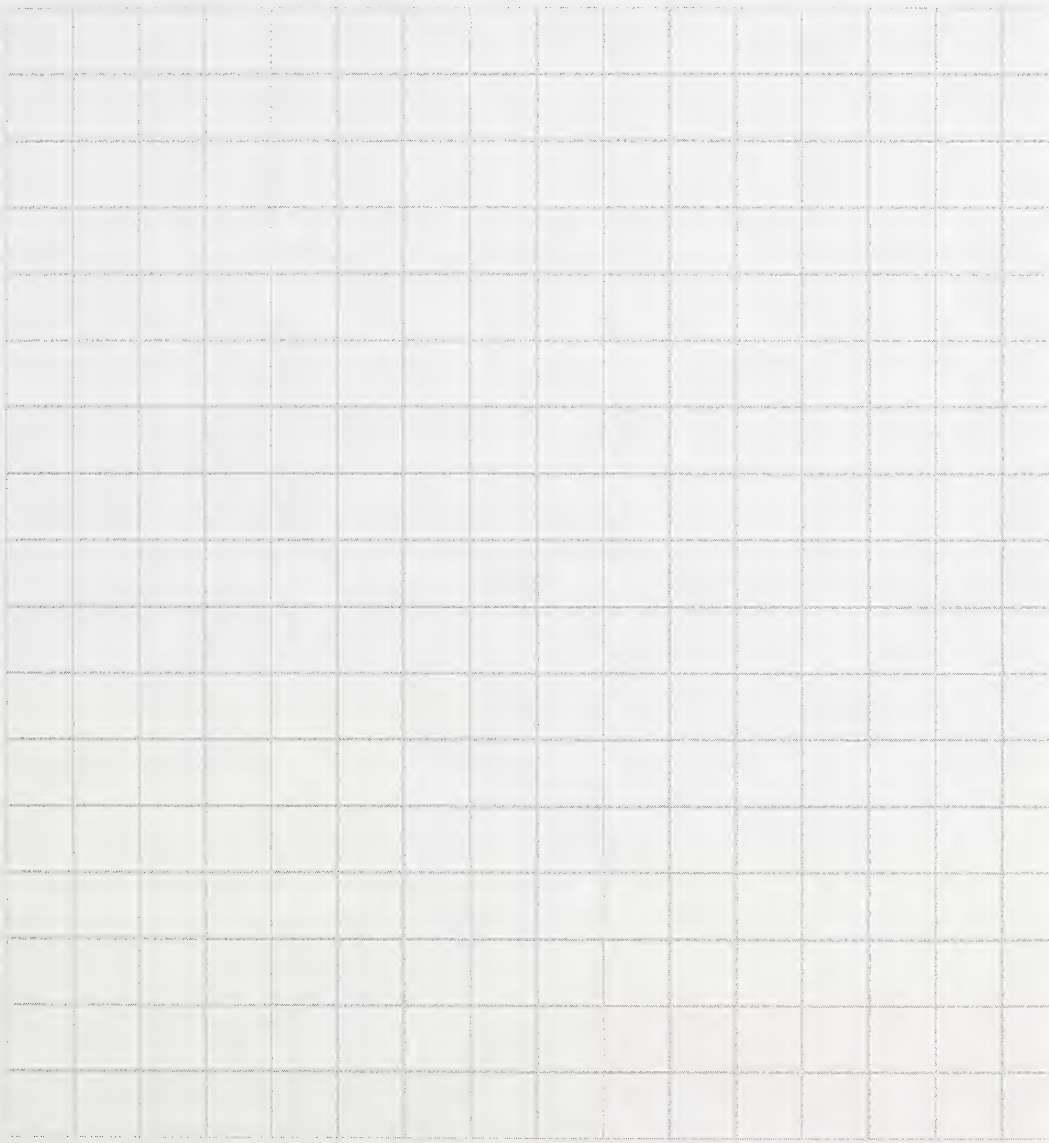






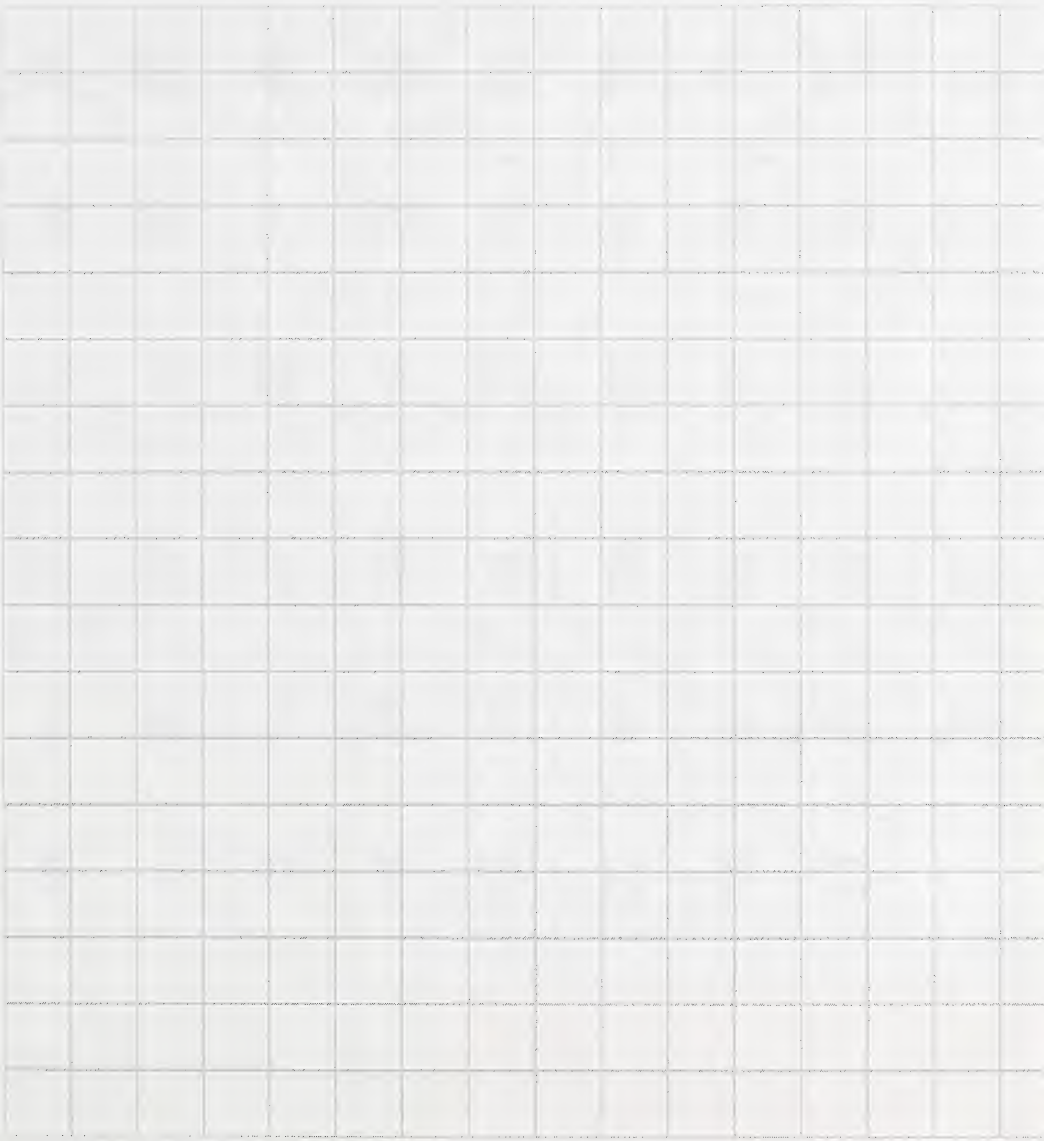


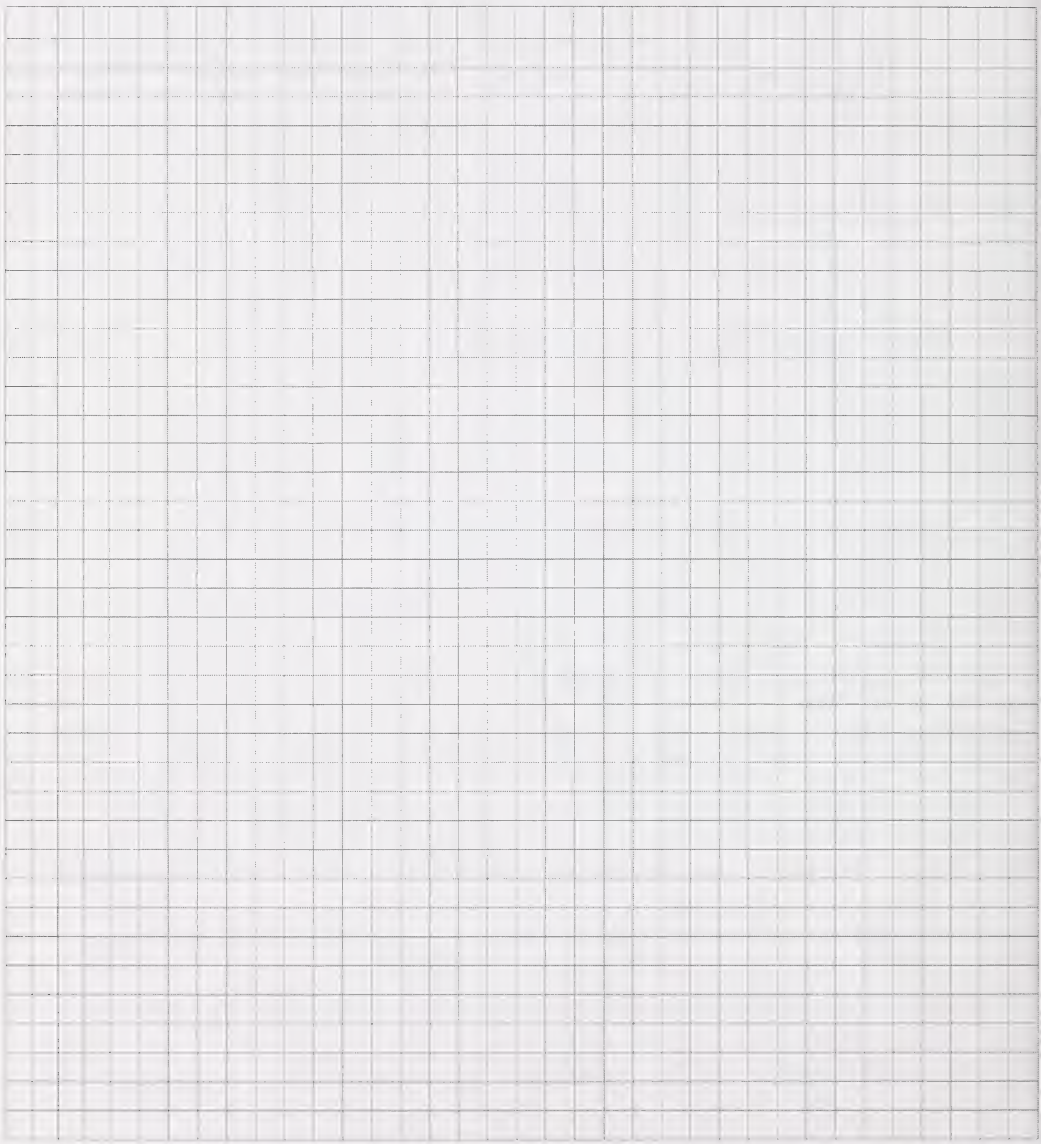
Centimetre Grid Paper



Centimetre Grid Paper

Centimetre Grid Paper

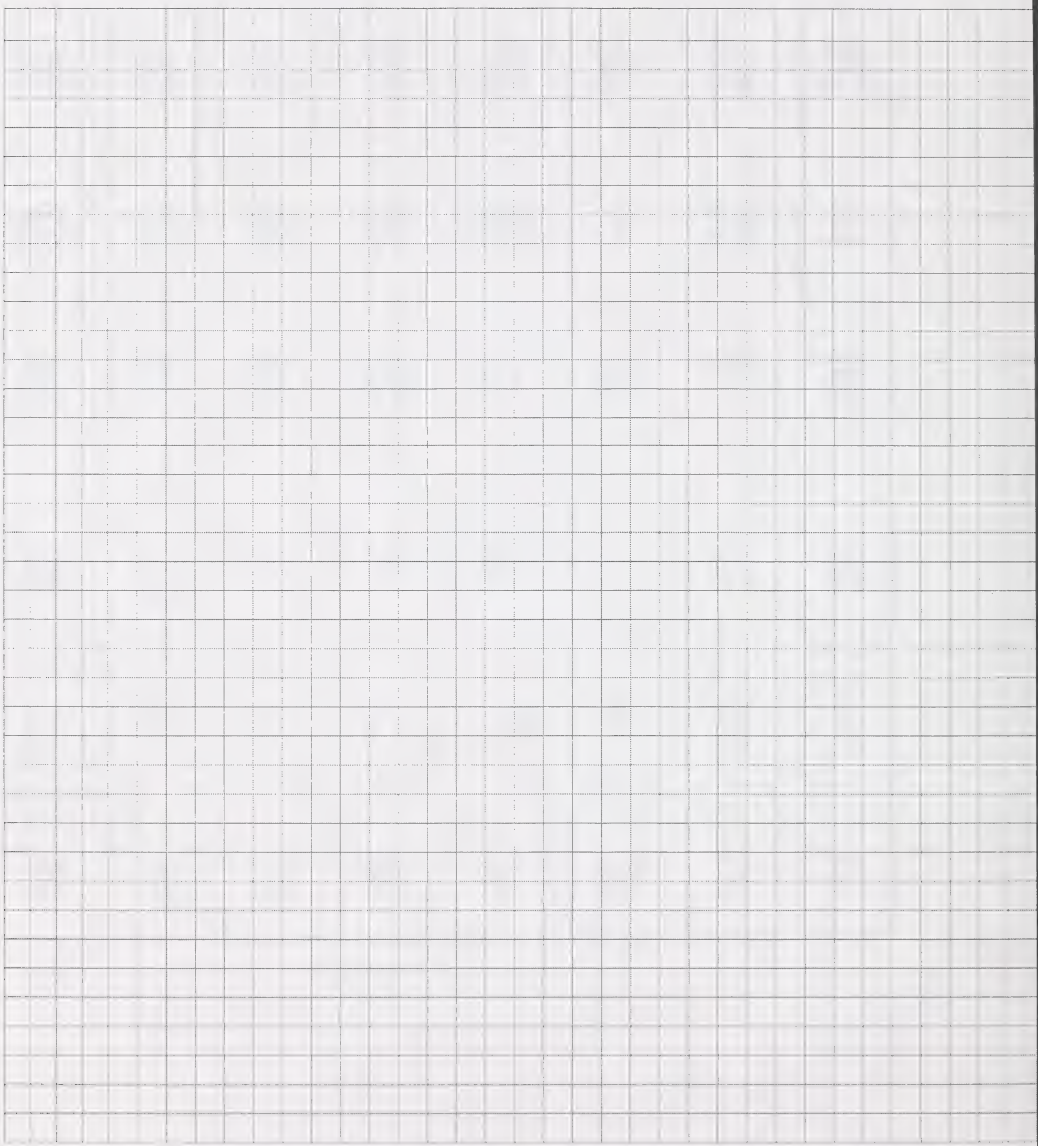




Letters for Lesson 16, Exploration 1

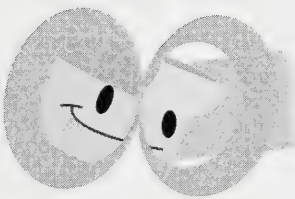
A	B	C	D	E	F	G	H	I
J	K	L	M	N	O	P	Q	R
S	T	U	V	W	X	Y	Z	

a	b	c	d	e	f	g	h	i
j	k	l	m	n	o	p	q	r
s	t	u	v	w	x	y	z	



Lesson 1

Types of Data



Let's Explore

Exploration 1: Creating and Researching Data

Materials: Small package of coloured candies, Plate, Pencil, Computer with Internet access

Creating Data

1. Open your package of candy and empty them on a plate.
2. Sort the candies by colour.
3. Record the colour and number of each candy in a table.

Colour	Number of Candies

4. Create a bar graph of your results. Remember to mark your scale and write in your colours as categories.

5. What type of data is this? Why?

6. Write three questions for the data in your graph. Answer each question.

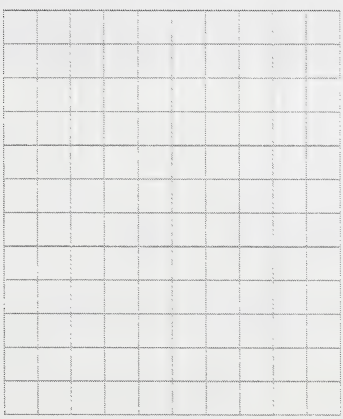
Researching Data

7. Find data on the Internet to answer the following question: What are the points earned by the highest scoring NHL hockey players for the most recent season?

8. Make a table for your data. Look up the scores of at least 4 players.

Player	Total Points

9. Create a bar graph of the data.



10. What type of data is this? Why?

11. Write 3 questions for the data in your graph. Answer each question.

Let's Practice

For 1 - 8:
A. Are the following situations first-hand or second-hand data?
B. How would you find the answer?

1. How many weeds are on the playground at school?

   A. _____

   B. _____

2. Do more people walk, drive or take public transportation in your province?

   A. _____

   B. _____

3. What is the favourite snack food of the students taking the field trip?

   A. _____

   B. _____

4. What are the tourist activities that make the most money in your province?

   A. _____

   B. _____

5. How much recycling is produced in the various cities of your province?

   A. _____

   B. _____

6. What activities are most popular with members of your family?

   A. _____

   B. _____

7. What ice hockey players in your local Atom league had the most points for the season?

   A. _____

   B. _____

8. What ice hockey players on the Canadian National Team had the most points for the season?

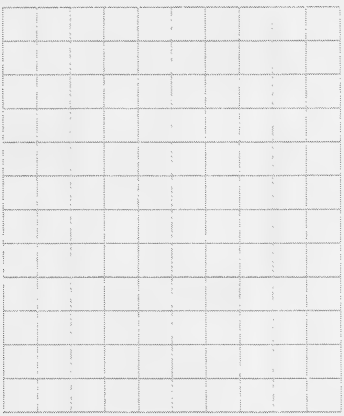
   A. _____

   B. _____

9. Write a question that requires first-hand data to find the answer.

10. Perform the experiment to collect data for your question formed in number 9 and record the data in a table.

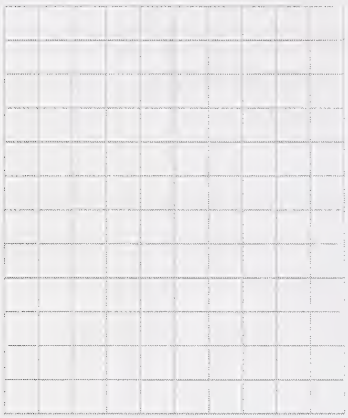
11. Create a bar graph for the data.



12. Write a question that requires second-hand data to find the answer.

13. Perform the research required to collect data for your question formed in number 12 and record the data in a table.

14. Create a bar graph for the data.



15. Reflect: What are three questions you could answer using first-hand data?

16. Reflect: What are three questions you could answer using second-hand data?

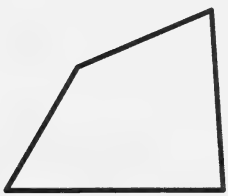
Mixed Review

For 1 – 6: Choose the BEST name from the list for each figure shown:

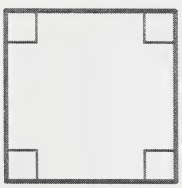
quadrilateral	parallelogram	rectangle
square	trapezoid	rhombus

1. _____

2. _____



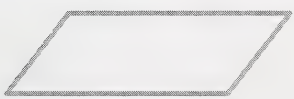
3. _____

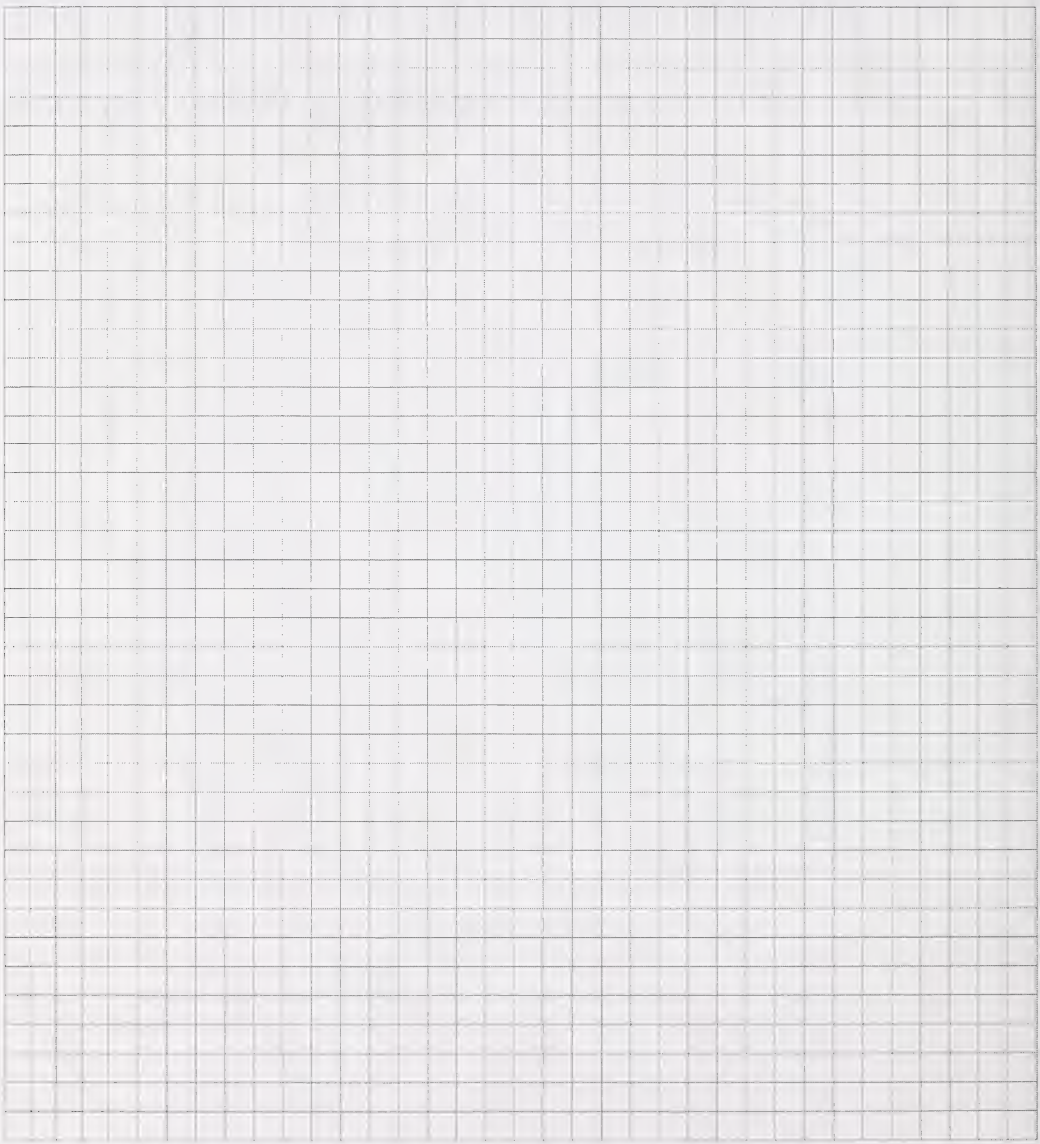


4. _____

5. _____

6. _____





Lesson 2

Double Bar Graphs

Let's Explore

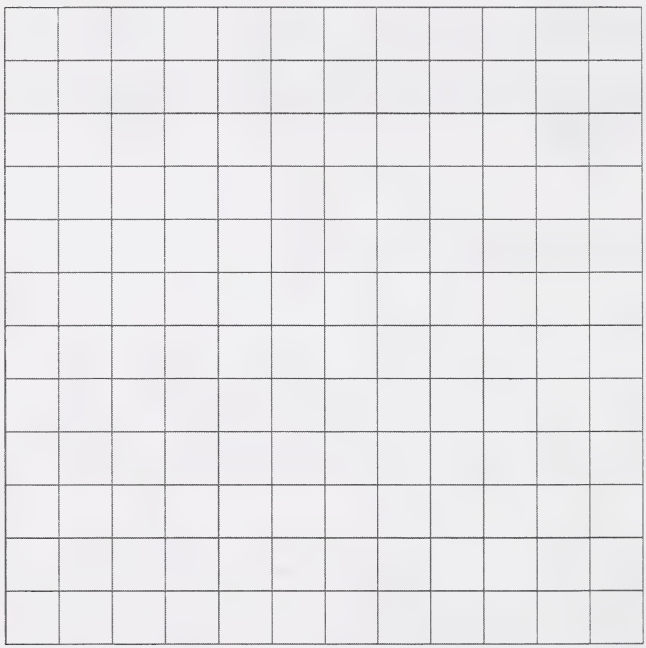
Exploration 1: Investigator

Materials: Pencil, Coloured pencils

You are analyzing data for your friend, Alyssa. She is organizing a service group for 11 year olds. She surveyed them on what colour they want for their group shirt. She would like to know the difference between boys and girls in the results. The following are the results:

Alyssa	Blue	**Michelle**	Yellow	**Debbie**	Green	**Julia**	Blue
Connor	Blue	**Jenny**	Green	**Josh**	Blue	**David**	Green
Nancy	Red	**John**	Blue	**Cameron**	Green	**Alexandra**	Red
Christine	Blue	**Matthew**	Red	**Jared**	Blue	**Rob**	Green
Wayne	Green	**Daksha**	Red	**Lian**	Yellow	**Karl**	Green
Nina	Yellow	**Mary**	Green	**Karen**	Yellow	**Louise**	Red
Barry	Red	**Graham**	Yellow	**Harvey**	Green	**Tyler**	Red
Jay	Green	**Sandra**	Red	**Carrie**	Red	**Ryan**	Green
Amanda	Yellow	**Kathy**	Green	**Zach**	Green	**Ingrid**	Blue
Elizabeth	Yellow	**Kim**	Red	**Sophie**	Yellow	**Patrick**	Blue

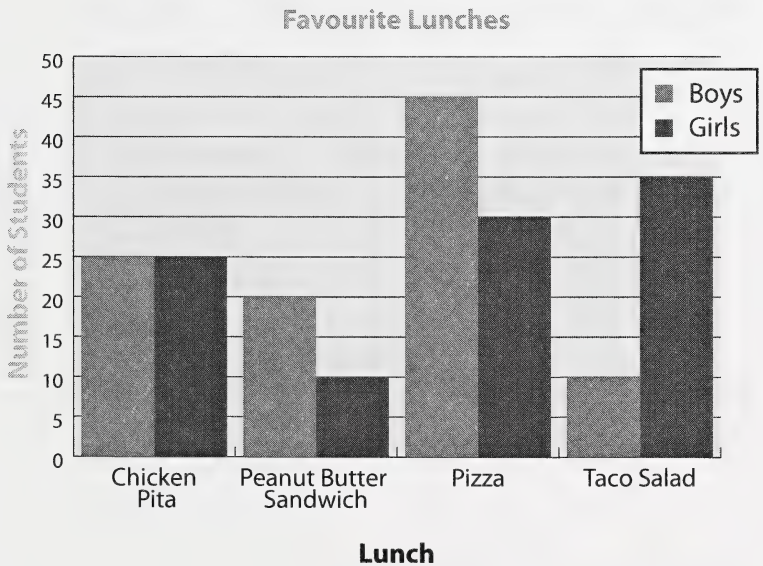
Make a double bar graph of the data and report the results to Alyssa. Suggest to her what shirt colour she should choose based on the survey results.



Let's Practice

For 1 - 8: Students were surveyed with the question: What is your favourite lunch?

Use the bar graph to answer the questions that follow.



1. How many more girls than boys chose taco salad?

2. Which lunch is liked equally by both boys and girls?

3. How many boys were surveyed?

4. How many girls were surveyed?

5. How many students chose pizza as their favourite lunch?

6. For which lunch is there the greatest difference between boys and girls?

7. Which lunch is the favourite for a total of 30 students?

8. Which lunch is the favourite overall?

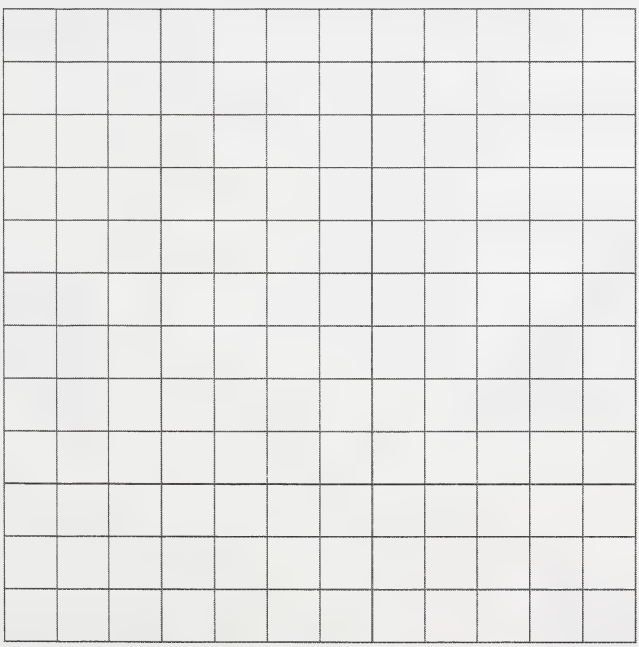
9. Create a double bar graph for the following data:

Survey question: What is your favourite dessert?

Survey group: Grade 5 students

Results:

Dessert	Boys	Girls
Cake	20	15
Ice Cream	10	20
Fruit Salad	5	10
Pie	15	5



10. Write three questions for your bar graph and answer each.

11. Reflect: What do you find most challenging about making double bar graphs and why?

Mixed Review

Write a fraction for each shaded region.

1. _____

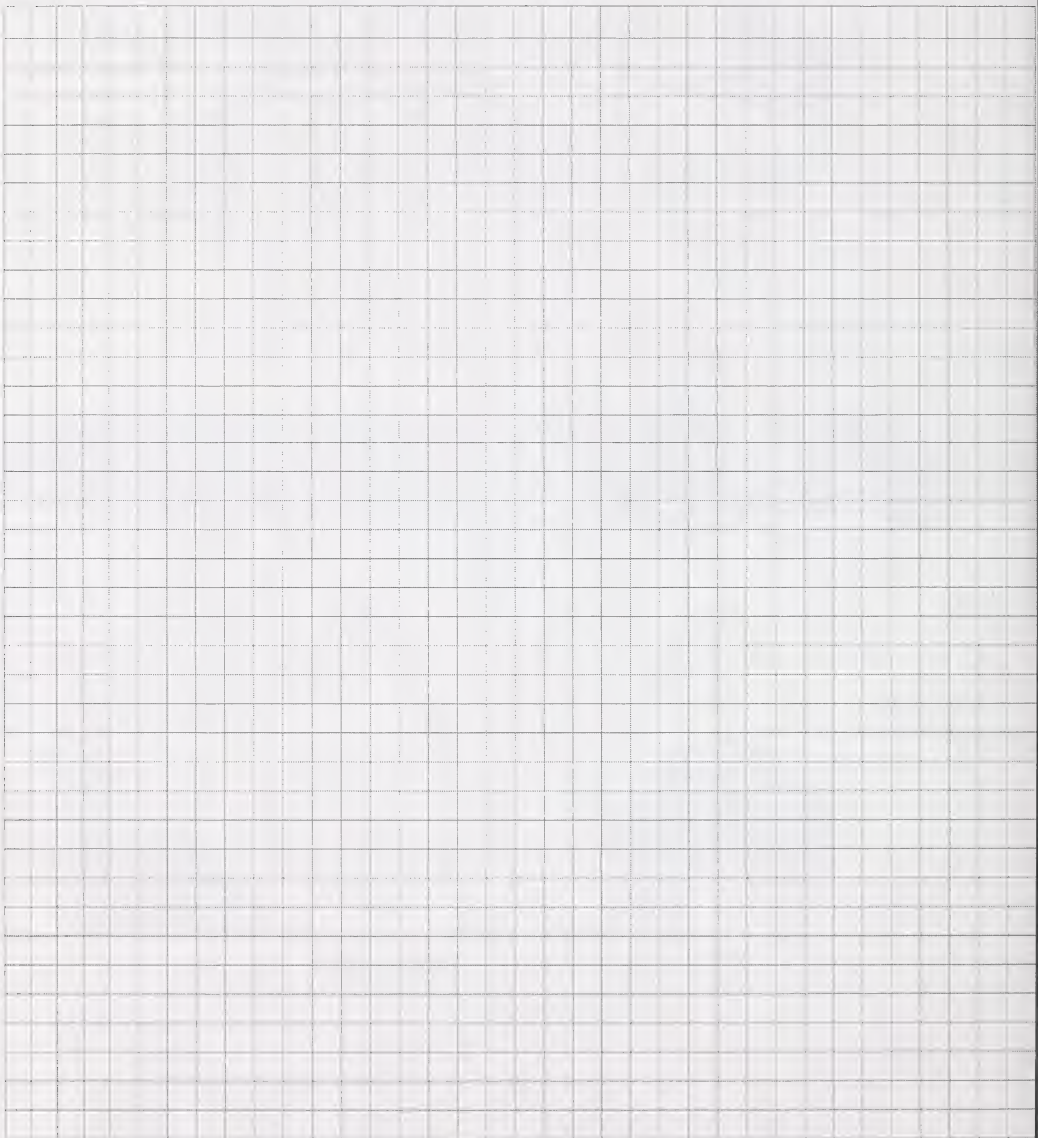
2. _____

3. _____

4. _____

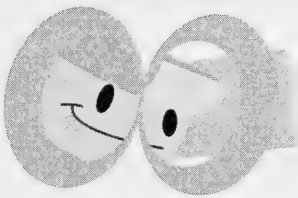
5. _____

Lesson 2: Double Bar Graphs



Lesson 3

Describing Outcomes



Let's Explore

Exploration 1: Spinners

Materials: Pencil

Write numbers on the parts of the spinner to fit the given situations.

1. Make each of the following events certain:
   - number is odd
   - number is less than 20
   - number has two-digits

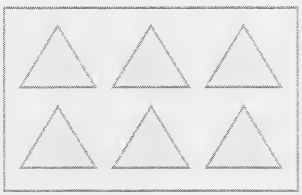
2. Make each of the following events impossible:
   - number is odd
   - number is greater than 20
   - number has two-digits

3. Make each of the following events possible:
   - number is even
   - number is divisible by 3
   - number has two-digits

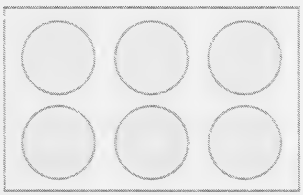
Let's Practice

For 1 - 3: Write the word: Certain, Possible, or Impossible, to describe the event of pulling a circle from each of the following.

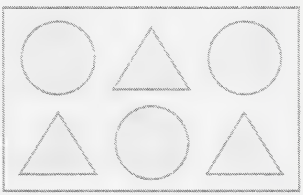
1. _____



2. _____



3. _____



For 4 - 6: Write the word: Certain, Possible, or Impossible, to describe the event.

4. There will be a Monday next week. _____

5. You will not have a birthday within the next year. _____

6. It will rain within the next two weeks. _____

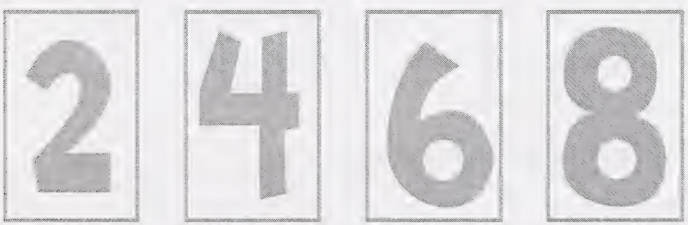
For 7 - 9: Draw a set of figures for the following statements.

7. It is impossible to get a square.

8. It is certain to get a square.

9. It is possible to get a square.

For 10 - 12: Nina has the following cards in a bag:



10. Describe the event of drawing an even card.

11. Describe the event of drawing a 5.

12. Describe the event of drawing an 8.

13. Reflect: Have you ever heard the descriptions certain, possible, and impossible used in your life outside of math class? Are any of these descriptions related to the concept of this lesson? How?

Mixed Review

For 1 – 3: Estimate the answers using front-end estimation.

1. 3.25 + 4.08 + 5.35

2. 1.65 + 5.32 + 9.03

3. 8.27 + 6.41 + 12.38

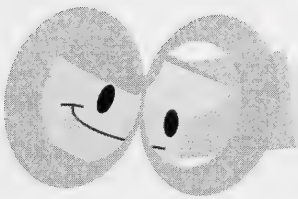
For 4 – 5: Write the numbers in order from least to greatest.

4. 3.48, 3.58, 3.28, 3.08

5. 2.41, 2.39, 2.37, 2.4

Lesson 4

Comparing Outcomes



Let's Explore

Exploration 1: Bag of Coins

Materials: Many coins of different sizes, Small paper bag, Pencil

For 1 – 3: Use more than two types of coins in your bag.

1. Put coins in a bag so that it is less likely to draw a penny. List the coins you used.

2. Put coins in a bag so that it is equally likely to draw a penny. List the coins you used.

3. Put coins in a bag so that it is more likely to draw a penny. List the coins you used.

For 4 – 8: Create a bag with 12 coins using pennies, nickels, dimes, and quarters.

4. Describe the contents of your bag.

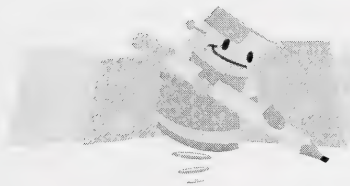
5. What coin are you most likely to pull out of the bag.

6. What coin are you least likely to pull out of the bag.

7. Draw a coin out of your bag 50 times and record the results in the table using tally marks.

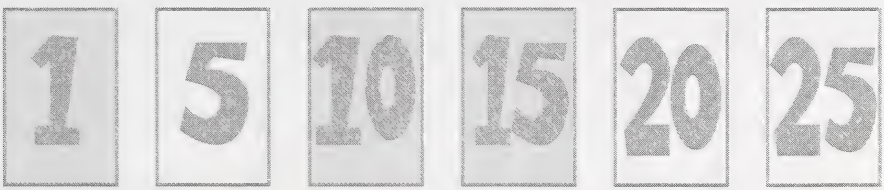
Coin	Tally	Total Number

8. Do your results match your answers to numbers 5 and 6? Why or why not?



Let's Practice

For 1 - 5: Use the cards to decide if the event is less likely, equally likely or more likely.



1. drawing a number divisible by 5

2. drawing a white card

3. drawing a two-digit number

4. drawing a one-digit number

5. drawing a number divisible by 10

6. Zach puts 18 blue marbles, 10 green marbles, 2 yellow marbles and 5 red marbles in a bag. Which colour is he most likely to pull out?

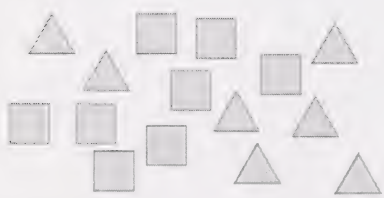
   A. Blue B. Green C. Red D. Yellow

For 7 - 12: Suppose you put the following objects in a small bag. Which object are you more likely to pull out?

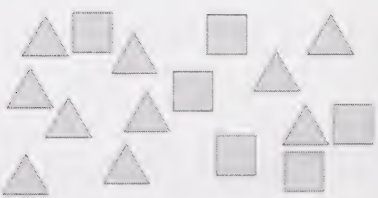
7. _____

8. _____

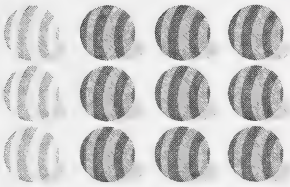
9. _____



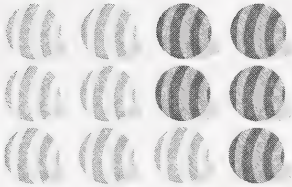
10. _____



11. _____



12. _____



13. Reflect: Create a group of objects and describe an event for the objects as more likely, equally likely and less likely.

Mixed Review

Solve the following.

1. $x - 10 = 14$

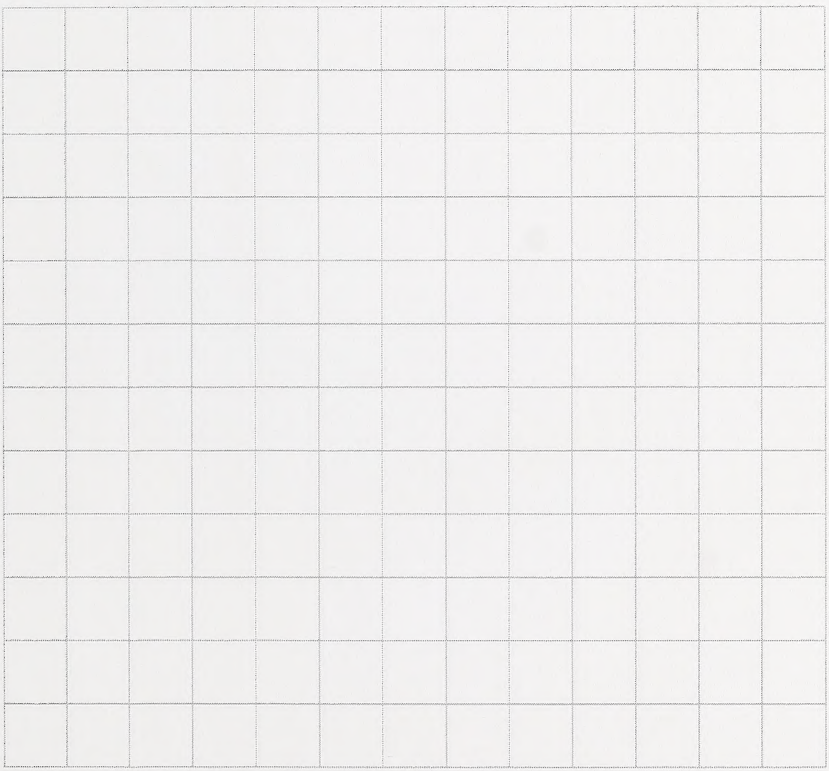
2. $r + 6 = 18$

3. $12 = 4y$

4. $\frac{p}{4} = 624$

5. $18 = w + 6$

Bar Graph Template



Bar Graph Template

ISBN 978-0-7741-3069-